BLOOD-IRON

LanParty BI 785G-M35

System Board User's Manual

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FCC and DOC Statement on Class B

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio TV technician for help.

Notice:

1. The changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.
2. Shielded interface cables must be used in order to comply with the emission limits.

Table of Contents

Copyright 2

Trademarks 2

FCC and DOC Statement on Class B 3

Warranty 7

Static Electricity Precautions 8

Safety Measures 8

About the Package 9

Before Using the System Board 9

Chapter 1 - Introduction 10

- Specifications 10
- Features 12

Chapter 2 - Hardware Installation 15

- System Board Layout 15
- System Memory 16
  - Installing the DIM Module 19
- CPU 21
  - Installing the CPU 21
  - Installing the Fan and Heat Sink 24
- Northbridge Heat Sink 26
- Jumper Settings 27
  - Clear CMOS Data 27
  - PS/2 Power Select 28
  - USB Power Select 29
  - PCIE Gen 1 / Gen 2 Select 29
  - HDMI/DVI Select 30
- Rear Panel I/O Ports 30
  - PS/2 Ports and S/PDIF Ports 31
  - HDMI, VGA and DVI-I Ports 32
  - USB and LAN Ports 33
  - Audio 34
- Internal I/O Connectors 35
  - Serial ATA Connectors 35
  - FDD Connector and IDE Connector 36
  - Serial (COM) Connectors 37

Cooling Fan Connectors.. 38
LEDs.. 39
Power Connectors 40
Front Panel Connectors 42
PCI Express Slots... 44
Download Flash BIOS Connector 44

Chapter 3 - BIOS Setup

Chapter 3 - BIOS Setup.. 45

Switchable Modes for Overclocking 45
Easy Mode 45
Advance Mode 45
Award BIOS Setup Utility.. 46
Standard CMOS Features 47
Advanced BIOS Features.. 51
Advanced Chipset Features... 54
Integrated Peripherals 60
Power Management Setup.. 67
PnP/PCI Configurations 71
PC Health Status.. 74
Genie BIOS Setting 76
CMOS Reloaded 88
Load Optimized Defaults 91
Set Supervisor Password.. 92
Set User Password 93
Save & Exit Setup.. 94
Exit Without Saving.. 95
RAID BIOS 96
Updating the BIOS... 97

Chapter 4 - Supported Software 98

AMD RS880 Drivers 99
AMD South Bridge Drivers 103
WebPAM Utility... 107
ATi Radeon Drivers 110
nVidia GForce 8 Series Drivers 114
Realtek Audio Drivers 116
JMC250 LAN Drivers.. 118
RAID Floppy Driver 120
Smart Guardian 121
AMD OverDrive.. 124
Adobe Acrobat Reader 7.05 128

Chapter 5 - RAID 130

RAID Levels 130
  RAID 0 (Striped Disk Array without Fault Tolerance) 130
  RAID 1 (Mirroring Disk Array with Fault Tolerance) 130
  RAID 0+1 (Striping and Mirroring) 130
Settings 130
  Step 1: Connect the Serial ATA Drives 131
  Step 2: Configure Serial ATA in the Award BIOS 131
  Step 3: Configure RAID in the RAID BIOS 131
  Step 4: Install the RAID Driver During OS Installation 131

Chapter 6 - Hybrid Graphics 133

Basic Requirements 133
Hybrid Graphics Setup 133

Chapter 7 - Cool’n’Quiet Technology 134

Cool‘n’Quiet Technology 134

Chapter 8 - Dual Display Configuration 136

Display Interfaces 136
Dual Display Configuration 138

Chapter 9 - Audio Configuration 139

Configuring 2/4/5.1/7.1-Channel Audio 139
High Definition Audio (HD Audio) 140

Appendix A - ABS: Auto Boost System 144

Installing ABS 144
The ABS Utility 147

Appendix B - Troubleshooting 152

Appendix C - Debug LED Post and Troubleshooting 156

Warranty

1. Warranty does not cover damages or failures that arised from misuse of the product, inability to use the product, unauthorized replacement or alteration of components and product specifications.

2. The warranty is void if the product has been subjected to physical abuse, improper installation, modification, accidents or unauthorized repair of the product.

3. Unless otherwise instructed in this user’s manual, the user may not, under any circumstances, attempt to perform service, adjustments or repairs on the product, whether in or out of warranty. It must be returned to the purchase point, factory or authorized service agency for all such work.

4. We will not be liable for any indirect, special, incidental or consequencial damages to the product that has been modified or altered.

Static Electricity Precautions

It is quite easy to inadvertently damage your PC, system board, components or devices even before installing them in your system unit. Static electrical discharge can damage computer components without causing any signs of physical damage. You must take extra care in handling them to ensure against electrostatic build-up.

1. To prevent electrostatic build-up, leave the system board in its anti-static bag until you are ready to install it.

2. Wear an antistatic wrist strap.

3. Do all preparation work on a static-free surface.

4. Hold the device only by its edges. Be careful not to touch any of the components, contacts or connections.

5. Avoid touching the pins or contacts on all modules and connectors. Hold modules or connectors by their ends.

Important:
Electrostatic discharge (ESD) can damage your processor, disk drive and other components. Perform the upgrade instruction procedures described at an ESD workstation only. If such a station is not available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the system chassis. If a wrist strap is unavailable, establish and maintain contact with the system chassis throughout any procedures requiring ESD protection.

Safety Measures

To avoid damage to the system:
- Use the correct AC input voltage range.

To reduce the risk of electric shock:
- Unplug the power cord before removing the system chassis cover for installation or servicing. After installation or servicing, cover the system chassis before plugging the power cord.

Battery:
- Danger of explosion if battery incorrectly replaced.
- Replace only with the same or equivalent type recommend by the manufacturer.
- Dispose of used batteries according to local ordinance.

About the Package

The system board package contains the following items. If any of these items are missing or damaged, please contact your dealer or sales representative for assistance.

☑ One system board
☑ One IDE cable
☑ Two Serial ATA data cables
☑ One Serial ATA power cable
☑ One I/O shield
☑ One DVD
☑ One multilingual installation guide

The system board and accessories in the package may not come similar to the information listed above. This may differ in accordance to the sales region or models in which it was sold. For more information about the standard package in your region, please contact your dealer or sales representative.

Before Using the System Board

Before using the system board, prepare basic system components.

If you are installing the system board in a new system, you will need at least the following internal components.

- A CPU
- Memory module
- Storage devices such as hard disk drive, CD-ROM, etc.

You will also need external system peripherals you intend to use which will normally include at least a keyboard, a mouse and a video display monitor.

Chapter 1 - Introduction

Specifications

Processor	• AMD® Phenom™ II processor • HyperTransport 3.0 (5200MT/s) • AMD OverDrive provides tuning options using the new "Advanced Clock Calibration" overclocking feature. • Socket 938 AM3+ 45nm
Chipset	• AMD chipset - Northbridge: AMD 785G - Southbridge: AMD SB710
System Memory	• Four 240-pin DDR3 DIMM sockets • Supports DDR3 1600(O.C.)/1333/1066/800 MHz • Dual channel (128-bit wide) memory interface • Supports non-ECC unbuffered DIMMs • Supports up to 16GB system memory • 128MB DDR3 Sideport memory
Expansion Slots	• 1 PCI Express (Gen 2) x16 slot • 1 PCI Express x1 slot • 2 PCI slots
BIOS	• Award BIOS • CMOS Reloaded • 8Mbit SPI Flash ROM
Graphics	• Integrated ATI Radeon™ HD 4200 graphics core • Onboard graphics interface - HDMI port for both digital audio and video HD display - DVI-I port for digital LCD display (DVI-D signal only) • Microsoft® DirectX 10.1 • CrossFireX™ (Hybrid Graphics) technology combines the onboard GPU and a discrete PCIE graphics card • Onboard Performance cache for added performance
Audio	• Realtek ALC885 High Definition audio CODEC • 8-channel audio output • DAC SNR/ADC SNR of 106dB/101dB • Full-rate lossless content protection technology • Optical S/PDIF-out and coaxial RCA S/PDIF-out interfaces
LAN	• JMicron JMC250 PCIE Gigabit LAN controllers • Fully compliant to IEEE 802.3 (10BASE-T), 802.3u (100BASE-TX) and 802.3ab (1000BASE-T) standards
IDE	• One IDE connector allows connecting up to two UltraDMA 133Mbps hard drives
Serial ATA with RAID	• Supports up to 6 SATA devices • SATA speed up to 3Gb/s • RAID 0, RAID 1 and RAID 0+1

Rear Panel I/O	• 1 mini-DIN-6 PS/2 mouse port • 1 mini-DIN-6 PS/2 keyboard port • 1 HDMI-out port • 1 coaxial RCA S/PDIF-out port • 1 optical S/PDIF-out port • 1 VGA port • 1 DVI-I port (DVI-D signal only) • 4 USB 2.0/1.1 ports • 1 RJ45 LAN port • Center/subwoofer, rear R/L and side R/L jacks • Line-in, line-out (front R/L) and mic-in jacks
Internal I/O	• 4 connectors for 8 additional external USB 2.0 ports • 1 connector for an external COM port • 1 front audio connector • 1 S/PDIF connector • 6 Serial ATA connectors • 1 40-pin IDE connector • 1 floppy connector • 1 24-pin ATX power connector • 1 8-pin 12V power connector • 1 front panel connector • 1 download flash BIOS connector • 6 fan connectors
Power Management	• ACPI and OS Directed Power Management • ACPI STR (Suspend to RAM) function • Wake-On-PS/2 Keyboard/Mouse • Wake-On-USB Keyboard/Mouse • Wake-On-Ring • Wake-On-LAN • RTC timer to power-on the system • AC power failure recovery
Hardware Monitor	• Monitors CPU/system/chipset temperature • Monitors 12V/5V/3.3V/Vcore/Vbat/5Vsb/Vdimm/Vchip voltages • Monitors the speed of the cooling fans • CPU Overheat Protection function monitors CPU temperature during system boot-up
PCB	• microATX form factor • 24.5cm (9.64”) x 24.5cm (9.64”)

Features

DDR3

DDR3 delivers increased system bandwidth and improved performance. It offers peak data transfer rate of up to 21 Gb/s bandwidth. The advantages of DDR3 are its higher bandwidth and its increase in performance at a lower power than DDR2.

CrossFireX (Hybrid Graphics)

Based on the ATI CrossFire™ multi-GPU technology, CrossFireX™ (Hybrid Graphics) takes gaming experience to the next level. Hybrid Graphics is a combination of the integrated graphics and a discrete graphics card delivering high quality gaming images and improved performance. Its multi-GPU performance capabilities enhance gaming performance, productivity and platform power efficiency to the mainstream PC.

PCI Express Gen 2

PCI Express Gen 2 is a high bandwidth I/O infrastructure that possesses the ability to scale speeds by forming multiple lanes. The x16 PCI Express lane supports transfer rate up to 5Gb/s.

Integrated Graphics

The northbridge chip comes integrated with the ATI Radeon™ HD 4200 graphics core delivering exceptional 3D graphics performance. It supports HDMI and DVI interfaces.

DVI

DVI (Digital Visual Interface) is a form of video interface technology made to maximize the quality of flat panel LCD monitors and modern video graphics cards. Data is transmitted using the TMDS (Transition Minimized Differential Signaling) protocol, providing a digital signal from the PC's graphics subsystem to the display.

HDMI

HDMI (High-Definition Multimedia Interface) is a compact audio/video connector interface for transmitting uncompressed digital streams. It delivers multi-channel audio and uncompressed digital video signals for full HD 1080p visuals through a single cable. Connect a LCD monitor or digital TV that has the HDMI port.

8CH High Definition Audio

The onboard Realtek ALC885 is a High Definition audio codec and the 6 audio jacks at the rear I/O panel provides 8-channel audio output for advanced 7.1-channel super surround sound audio system. ALC885 also supports S/PDIF output, allowing digital connections with DVD systems or other audio/video multimedia.

S/PDIF

S/PDIF is a standard audio file transfer format that transfers digital audio signals to a device without having to be converted first to an analog format. This prevents the quality of the audio signal from degrading whenever it is converted to analog. S/PDIF is usually found on digital audio equipment such as a DAT machine or audio processing device. The S/PDIF interface on the system board sends surround sound and 3D audio signal outputs to amplifiers and speakers and to digital recording devices like CD recorders.

Serial ATA with RAID

Serial ATA is a storage interface that is compliant with SATA 1.0 specification. It supports speed of up to 3Gb/s. Serial ATA improves hard drive performance faster than the standard parallel ATA whose data transfer rate is 100MB/s. The system board allows configuring RAID on Serial ATA devices. It supports RAID 0/1/0+1.

Gigabit LAN

The JMicron JMC250 PCI Express Gigabit LAN chip supports up to 1Gbps data rate.

CMOS Reloaded

CMOS Reloaded is a technology that allows storing multiple user-defined BIOS settings by using the BIOS utility to save, load and name the settings. This is especially useful to overclockers who require saving a variety of overclocked settings and being able to conveniently switch between these settings simultaneously.

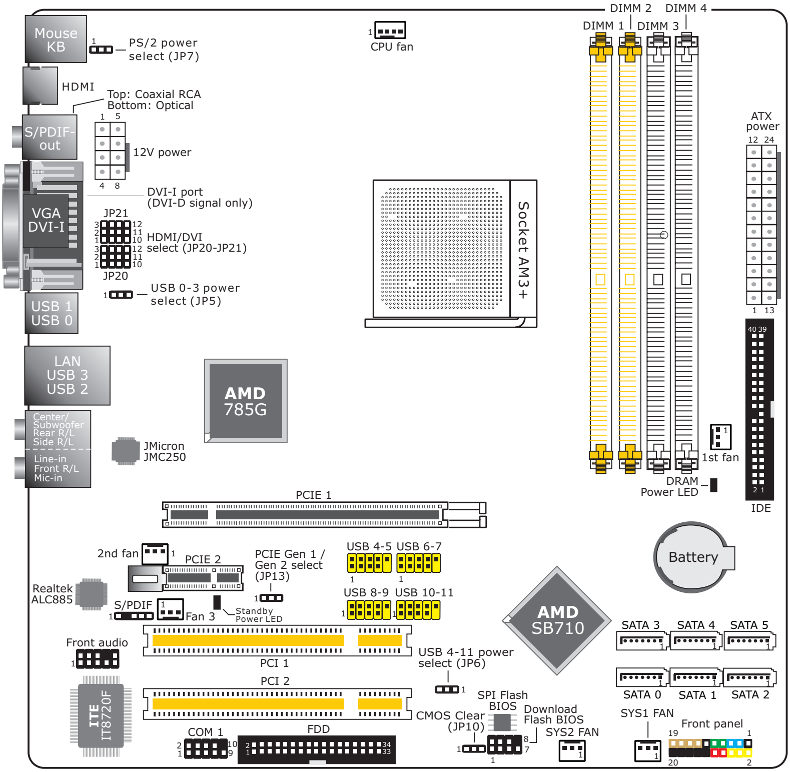
Genie BIOS

The options in Genie BIOS allows configuring the system to optimize system performance and overclock capability.

CPU Overheat Protection

CPU Overheat Protection has the capability of monitoring the CPU’s temperature during system boot up. Once the CPU’s temperature exceeded the temperature limit pre-defined by the CPU, the system will automatically shutdown. This preventive measure has been added to protect the CPU from damage and insure a safe computing environment.

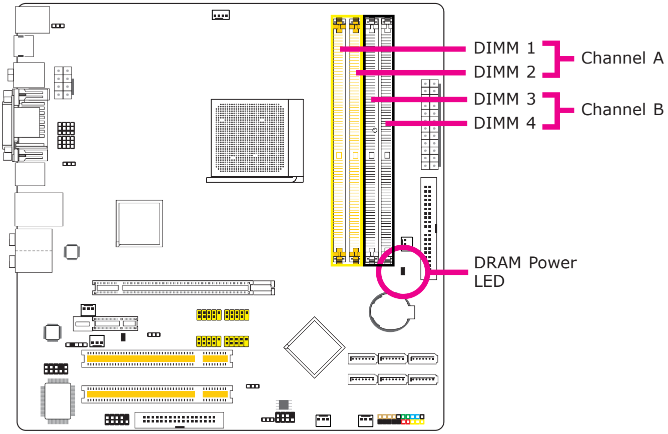
System Board Layout


Mouse
KB
1
PS/2 power
select (JP7)
HDMI
Top: Coaxial RCA
Bottom: Optical
S/PDIF-
out
1 5
12V power
4 8
VGA
DVI-I
DVI-I port
(DVI-D signal only)
JP21
HDMI/DVI
select (JP20-JP21)
JP20
USB 0-3 power
select (JP5)
USB 1
USB 0
LAN
USB 3
USB 2
Center/
Subwoofer
Rear R/L
Side R/L
Line-in
Front R/L
Mic-in
CPU fan
Socket AM3+
AMD
785G
JMicron
JMC250
DIMM 2
DIMM 4
DIMM 1
DIMM 3
ATX
power
12 24
1 13
40 39
2 1
IDE
1st fan
DRAM
Power LED
PCIE 1
2nd fan
PCIE 2
PCIE Gen 1 /
Gen 2 select
(JP13)
USB 4-5
USB 6-7
USB 8-9
USB 10-11
Battery
Realtek
ALC885
S/PDIF
Fan 3
Standby
Power LED
AMD
SB710
SATA 3
SATA 4
SATA 5
Front audio
PCI 1
USB 4-11 power
select (JP6)
SATA 0
SATA 1
SATA 2
PCI 2
SPI Flash
BIOS
Download
Flash BIOS
CMOS Clear
(JP10)
SYS1 FAN
SYS2 FAN
Front panel
19
20
ITE
IT8720F
COM 1
FDD
2 1
10 9
34 33

Important:
Electrostatic discharge (ESD) can damage your system board, processor, disk drives, add-in boards, and other components. Perform the upgrade instruction procedures described at an ESD workstation only. If such a station is not available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the system chassis. If a wrist strap is unavailable, establish and maintain contact with the system chassis throughout any procedures requiring ESD protection.

System Memory

Important:
When the DRAM Power LED lit red, it indicates that power is present on the DIMM sockets. Power-off the PC then unplug the power cord prior to installing any memory modules. Failure to do so will cause severe damage to the motherboard and components.



The four DIMM sockets are divided into 2 channels:

Channel A - DIMM 1 and DIMM 2
Channel B - DIMM 3 and DIMM 4

The system board supports the following memory interface.

Single Channel (SC)

Data will be accessed in chunks of 64 bits (8B) from the memory channels.

Virtual Single Channel (VSC)

If both channels are populated with different memory configurations, the MCH defaults to Virtual Single Channel.

Dual Channel (DC)

Dual channel provides better system performance because it doubles the data transfer rate.

Dynamic Mode Addressing

This mode minimizes the overhead of opening/closing pages in memory banks allowing for row switching to be done less often.

Single Channel	DIMMs are on the same channel. DIMMs in a channel can be identical or completely different. Not all slots need to be populated.
Virtual Single Channel	DIMMs of different memory configurations are on different channels. Odd number of slots can be populated.
Dual Channel	DIMMs of the same memory configuration are on different channels.
Dynamic Mode Addressing	In single channel, requires even number or rows (side of the DIMM) populated. This mode can be enabled with 1 SS, 2 SS or 2 DS. In VSC mode, both channels must have identical row structure.

BIOS Setting

Configure the system memory in the Genie BIOS Setting submenu of the BIOS. Refer to chapter 3 for more information.

The table below lists the various optimal operating modes that should be configured for the memory channel operation.

Config	DIMM 1	DIMM 2	DIMM 3	DIMM 4
No memory	E	E	E	E
Single channel A	P	E	E	E
Single channel A	P	P	E	E
Single channel A	E	P	E	E
Single channel B	E	E	P	E
Single channel B	E	E	P	P
Single channel B	E	E	E	P
Virtual single channel	E	P(**)	E	P(**)
Virtual single channel	E	P	P	E
Virtual single channel	E	P(**)	P	P(**)
Virtual single channel	P	E	E	P
Virtual single channel	P(**)	E	P(**)	E
Virtual single channel	p(**)	E	P(**)	P
Virtual single channel	P	P(**)	E	P(**)
Virtual single channel	P(**)	P	P(**)	E
Virtual single channel	P(**)	P(**)	P(**)	P(**)
Dual channel	E	P(*)(2,4)	E	P(*)(2,4)
Dual channel	P(*)(1,3)	E	P(*)(1,3)	E
Dual channel	P(*)(1,3)	P(*)(2,4)	P(*)(1,3)	P(*)(2,4)
Dynamic Mode Addressing	E	P(*)(2,4) DS	E	P(*)(2,4) DS
Dynamic Mode Addressing	P(*)(1,3) DS	E	P(*)(1,3) DS	E
Dynamic Mode Addressing	P(*)(1,3) DS	P(*)(2,4) DS	P(*)(1,3) DS	P(*)(2,4) DS
Dynamic Mode Addressing	E	P(*)(2,4) SS	E	P(*)(2,4) SS
Dynamic Mode Addressing	P(*)(1,3) SS	E	P(*)(1,3) SS	E
Dynamic Mode Addressing	P(*)(1,3) SS	P(*)(2,4) SS	P(*)(1,3) SS	P(*)(2,4) SS

P - denotes populated
E - denotes empty
* - denotes DIMMs are identical
** - denotes DIMMs are not identical
SS - denotes Single Sided DIMM
DS - denotes Double Sided DIMM
1, 2, 3 or 4 - denotes the DDR DIMM slot

Installing the DIM Module

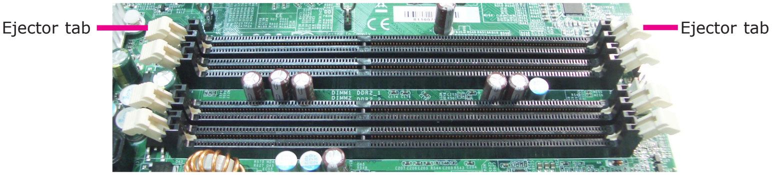
Note:
The system board used in the following illustrations may not resemble the actual board. These illustrations are for reference only.

1. Make sure the PC and all other peripheral devices connected to it has been powered down.

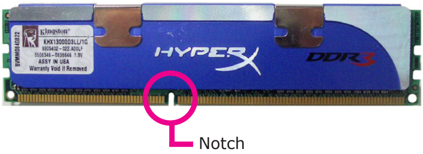
2. Disconnect all power cords and cables.

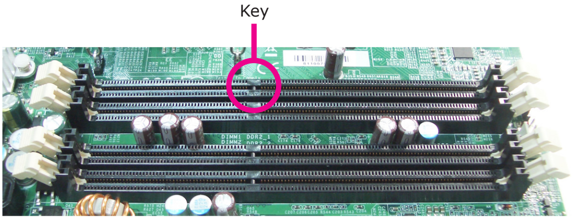
3. Locate the DIMM socket on the system board.

4. Push the "ejector tabs" which are at the ends of the socket to the side.

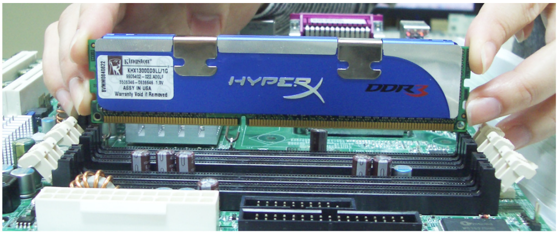


5. Note how the module is keyed to the socket.

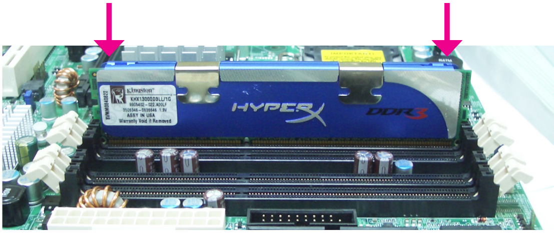




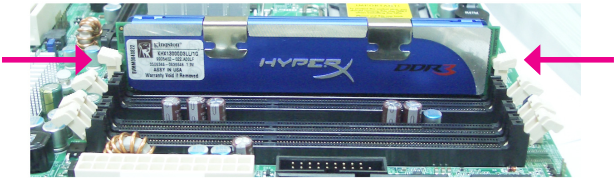
6. Grasping the module by its edges, position the module above the socket with the "notch" in the module aligned with the "key" on the socket. The keying mechanism ensures the module can be plugged into the socket in only one way.



7. Seat the module vertically, pressing it down firmly until it is completely seated in the socket.



8. The ejector tabs at the ends of the socket will automatically snap into the locked position to hold the module in place.



CPU

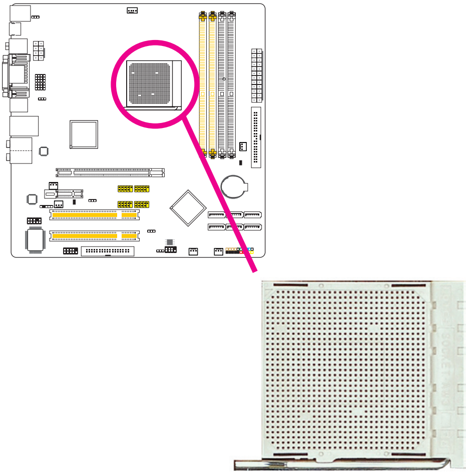
The system board is equipped with Socket AM3+ for installing an AMD CPU designed for this socket.

Installing the CPU

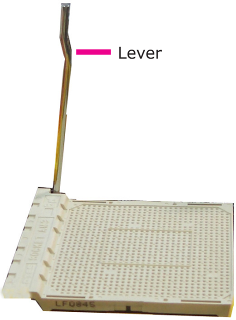
1. Make sure the PC and all other peripheral devices connected to it has been powered down.

2. Disconnect all power cords and cables.

3. Locate Socket AM3+ on the system board.

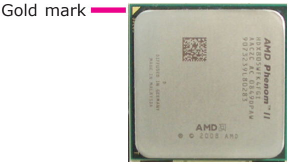


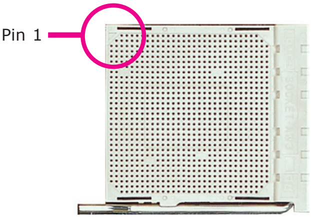
4. Unlock the socket by pushing the lever sideways, away from the socket, then lifting it up to a 90° angle. Make sure the lever is lifted to at least this angle otherwise the CPU will not fit in properly.



5. Position the CPU above the socket. The gold mark on the CPU must align with pin 1 of the CPU socket.

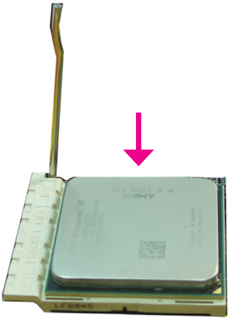
   Important:
   Handle the CPU by its edges and avoid touching the pins.



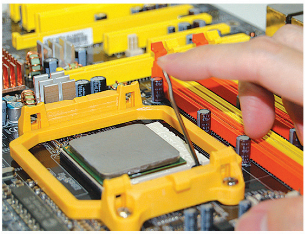


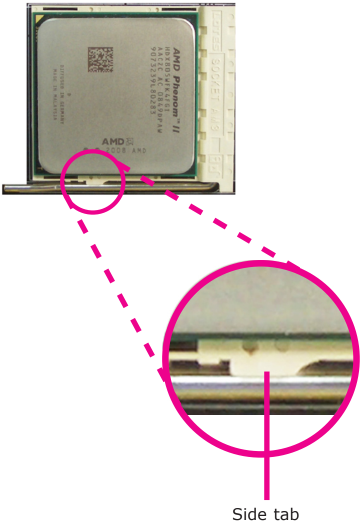
6. Insert the CPU into the socket until it is seated in place. The CPU will fit in only one orientation and can easily be inserted without exerting any force.

   Important:
   Do not force the CPU into the socket. Forcing the CPU into the socket may bend the pins and damage the CPU.



7. Once the CPU is in place, push down the lever to lock the socket. The lever should click on the side tab to indicate that the CPU is completely secured in the socket.





Installing the Fan and Heat Sink

The CPU must be kept cool by using a CPU fan with heat sink. Without sufficient air circulation across the CPU and heat sink, the CPU will overheat damaging both the CPU and system board.

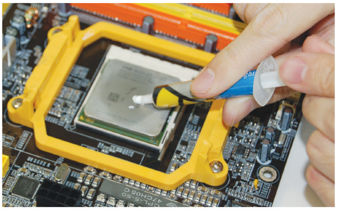
The fan / heat sink assembly must provide airflow adequate to ensure appropriate internal temperature and cooling of the components in the system. Failure to use the appropriate cooling system may result in reduced performance or, in some instances, damage to the system board.

Note:

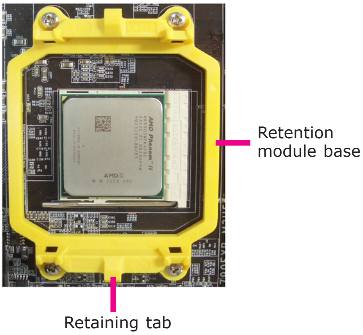
- Use only certified fan and heat sink.
- The fan and heat sink package usually contains the fan and heat sink assembly, and an installation guide. If the installation procedure in the installation guide differs from the one in this section, please follow the installation guide in the package.

1. Before you install the fan / heat sink, you must apply a thermal paste onto the top of the CPU. Do not apply the paste if the fan / heat sink already has a patch of thermal paste on its underside. Peel the strip that covers the paste before you place the fan / heat sink on top of the CPU.

   The thermal paste is usually supplied when you purchase the CPU or fan heat sink assembly. Do not spread the paste all over the surface. When you later place the heat sink on top of the CPU, the compound will disperse evenly.

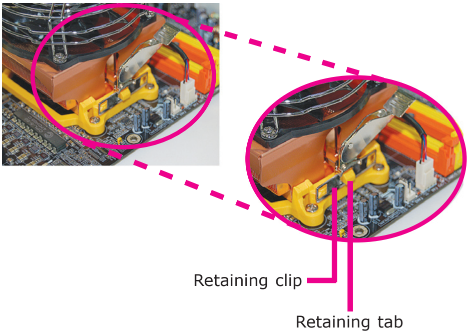


2. The system board comes with the retention module base already installed.

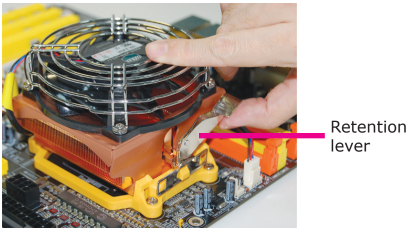


3. Place the heat sink on top of the CPU. Now hook one side of the retention clip onto the retention module base by fitting the hole(s) on the retention clip into the retaining tab(s) of the retention module base.

   Hook the other side of the retention clip so that the hole(s) on the retention clip also fit into the retaining tab(s) of the retention module base.



4. Move the retention lever to its opposite side then push it down to lock the fan and heat sink assembly to the retention module base.



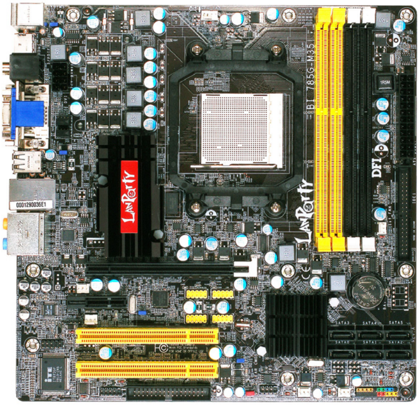
Note:

- You will not be able to secure the fan and heat sink assembly in place if it did not fit properly onto the retention module base.
- Make sure there is sufficient air circulation across the CPU fan and heat sink.

5. Connect the CPU fan's cable connector to the CPU fan connector on the system board.

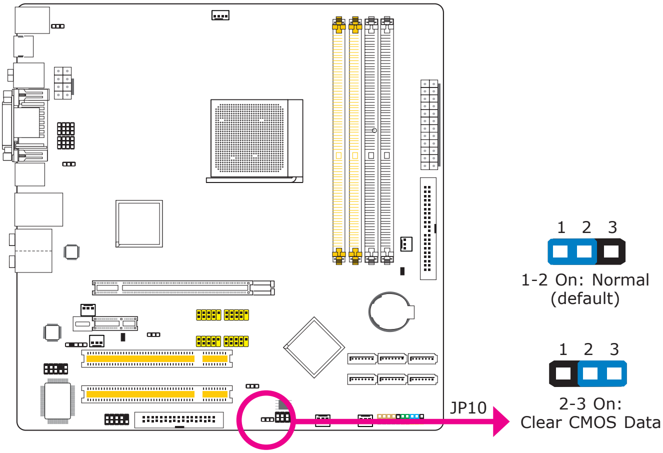
Northbridge Heat Sink

The Northbridge must be kept cool by using a heat sink. The heat sink will dissipate heat generated by the Northbridge. Without the heat sink, the Northbridge will overheat damaging both the Northbridge and the system board.



Jumper Settings

Clear CMOS Data



If you encounter the following,

a) CMOS data becomes corrupted.
b) You forgot the supervisor or user password.
c) The overclocked settings in the BIOS resulted to the system's instability or caused system boot up problems.

you can reconfigure the system with the default values stored in the ROM BIOS.

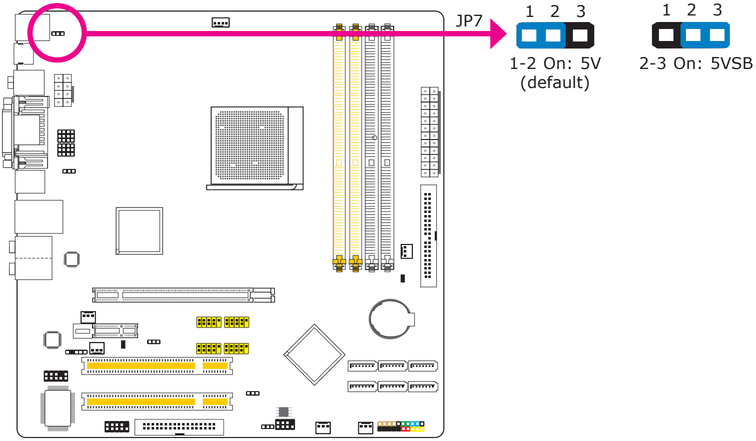
To load the default values stored in the ROM BIOS, please follow the steps below.

1. Power-off the system then unplug the power cord.

2. Set JP10 pins 2 and 3 to On. Wait for a few seconds and set JP10 back to its default setting, pins 1 and 2 On.

3. Now plug the power cord then power-on the system.

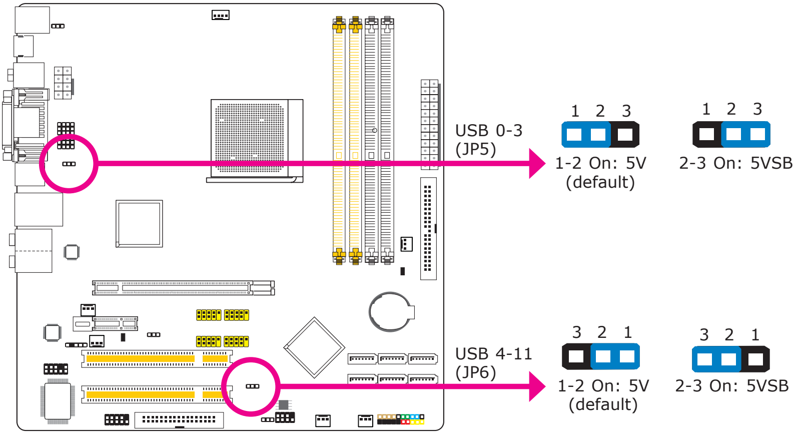
PS/2 Power Select


JP7
1 2 3
1-2 On: 5V
(default)
1 2 3
2-3 On: 5VSB

Selecting 5VSB will allow you to use the PS/2 keyboard or PS/2 mouse to wake up the system.

Important:
The 5VSB power source of your power supply must support ≥720mA.

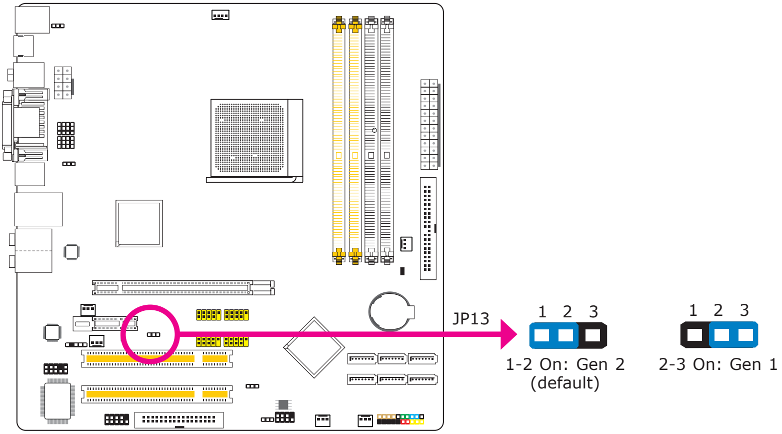
USB Power Select


USB 0-3
(JP5)
1 2 3
1-2 On: 5V
(default)
1 2 3
2-3 On: 5VSB
USB 4-11
(JP6)
3 2 1
1-2 On: 5V
(default)
3 2 1
2-3 On: 5VSB

Selecting 5VSB will allow you to use the USB keyboard or USB mouse to wake up the system.

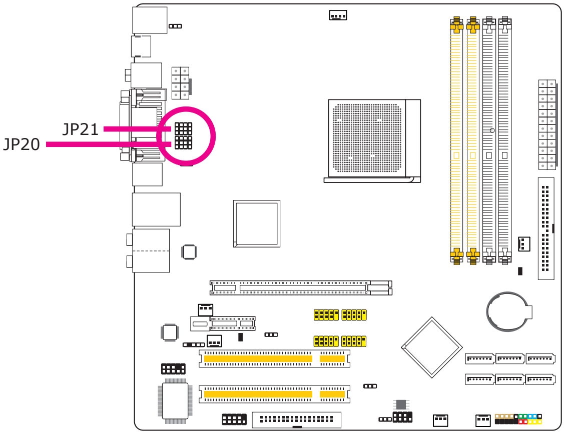
Important:
The 5VSB power source of your power supply must support ≥1.5A (2 devices) or ≥2A (3 or more devices).

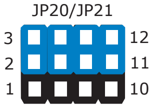
PCIE Gen 1 / Gen 2 Select


JP13
1 2 3
1-2 On: Gen 2
(default)
1 2 3
2-3 On: Gen 1

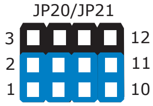
Set this jumper according to the type of PCI Express card that you are using.

HDMI/DVI Select




JP20/JP21
3
2
1
12
11
10

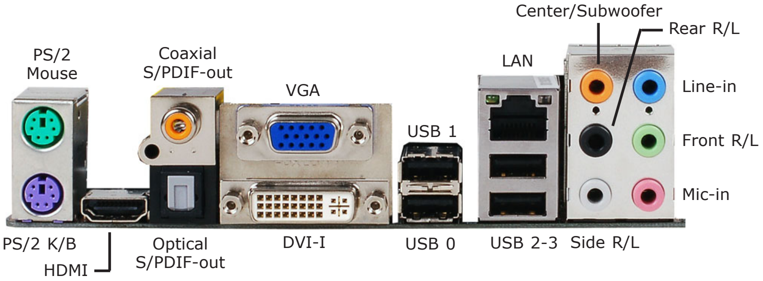
2-3, 5-6, 8-9, 11-12 On
DVI


JP20/JP21
3
2
1
12
11
10

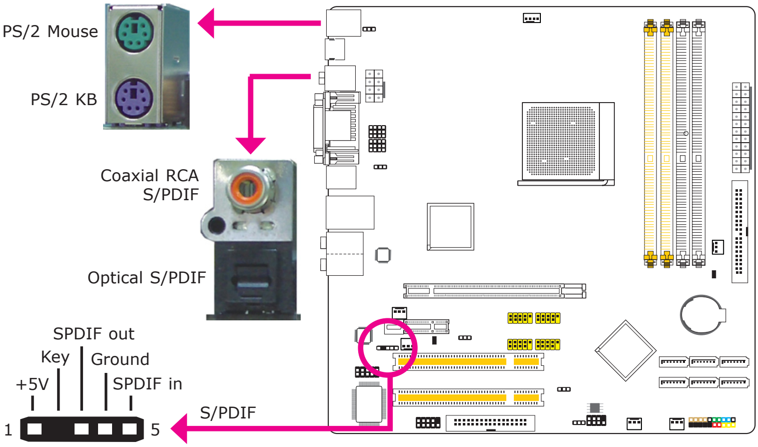
1-2, 4-5, 7-8, 10-11 On
HDMI

The system board is equipped with HDMI and DVI interfaces but you can only connect one display device at a time. Set this jumper according to the type of display device connected to the system.

Rear Panel I/O Ports


PS/2 Mouse
Coaxial S/PDIF-out
VGA
USB 1
LAN
Center/Subwoofer
Rear R/L
Line-in
Front R/L
Mic-in
PS/2 K/B
HDMI
Optical S/PDIF-out
DVI-I
USB 0
USB 2-3
Side R/L

PS/2 Ports and S/PDIF Ports



PS/2 Mouse and PS/2 Keyboard Ports

These ports are used to connect a PS/2 mouse and a PS/2 keyboard.

Optical S/PDIF

The optical S/PDIF jack is used to connect an external audio output device using an optical S/PDIF cable.

Coaxial RCA S/PDIF

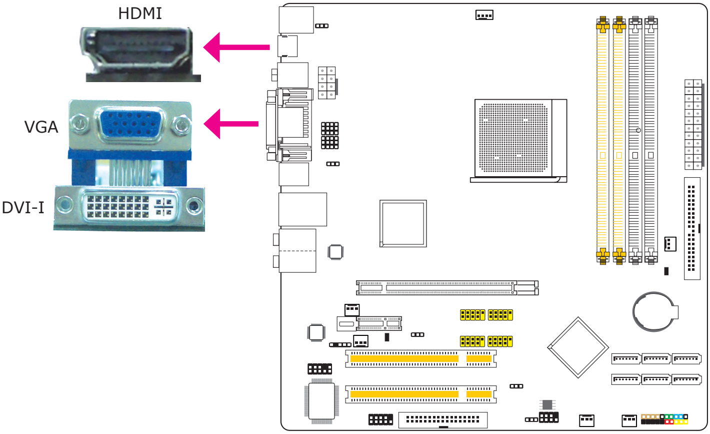
The coaxial RCA S/PDIF jack is used to connect an external audio output device using a coaxial S/PDIF cable.

Important:
DO NOT use optical S/PDIF and Coaxial RCA S/PDIF at the same time.

S/PDIF Connector

The S/PDIF connector is used to connect an external S/PDIF port. Your S/PDIF port may be mounted on a card-edge bracket. Install the card-edge bracket to an available slot at the rear of the system chassis then connect the audio cable to the S/PDIF connector. Make sure pin 1 of the audio cable is aligned with pin 1 of the S/PDIF connector.

HDMI, VGA and DVI-I Ports



HDMI

The HDMI port which carries both digital audio and video signals is used to connect a LCD monitor or digital TV that has an HDMI port.

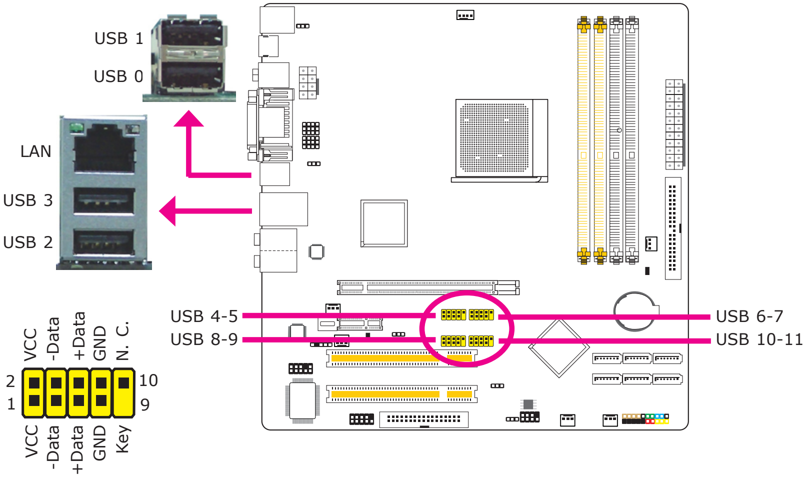
VGA

The VGA port is used for connecting a VGA monitor.

DVI-I

The DVI-I port is used to connect a digital LCD monitor or LCD TV. It supports DVI-D signal only.

USB and LAN Ports


USB 1
USB 0
LAN
USB 3
USB 2
USB 4-5
USB 8-9
USB 6-7
USB 10-11
VCC
-Data
+Data
GND
N. C.
2
1
10
9
VCC
-Data
+Data
GND
Key

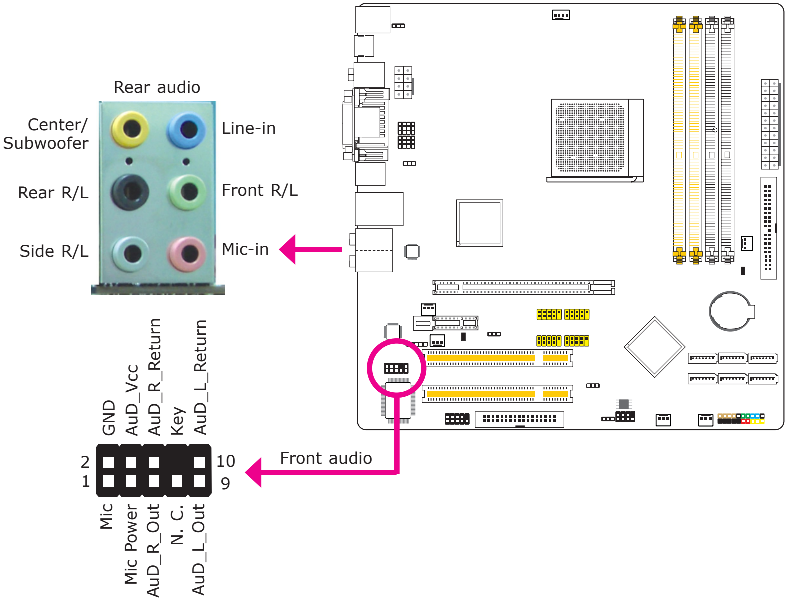
USB

The USB ports are used to connect USB 2.0/1.1 devices. The 10-pin connectors allow you to connect 8 additional USB 2.0/1.1 ports. Your USB ports may come mounted on a card-edge bracket. Install the card-edge bracket to an available slot at the rear of the system chassis then connect the USB port cables to these connectors.

LAN

The LAN port allows the system board to connect to a local area network by means of a network hub.

Audio


Rear audio
Center/
Subwoofer
Line-in
Rear R/L
Front R/L
Side R/L
Mic-in
GND
AuD_Vcc
AuD_R_Return
Key
AuD_L_Return
2
1
10
9
Front audio
Mic
Mic Power
AuD_R_Out
N. C.
AuD_L_Out

Rear Panel Audio

- Center/Subwoofer Jack (Orange)
  This jack is used to connect to the center and subwoofer speakers of the audio system.

- Rear Right/Left Jack (Black)
  This jack is used to connect to the rear right and rear left speakers of the audio system.

- Side Right/Left Jack (Gray)
  This jack is used to connect to the side left and side right speakers of the audio system.

- Line-in (Light Blue)
  This jack is used to connect any audio devices such as Hi-fi set, CD player, tape player, AM/FM radio tuner, synthesizer, etc.

- Line-out - Front Right/Left Jack (Lime)
  This jack is used to connect to the front right and front left speakers of the audio system.

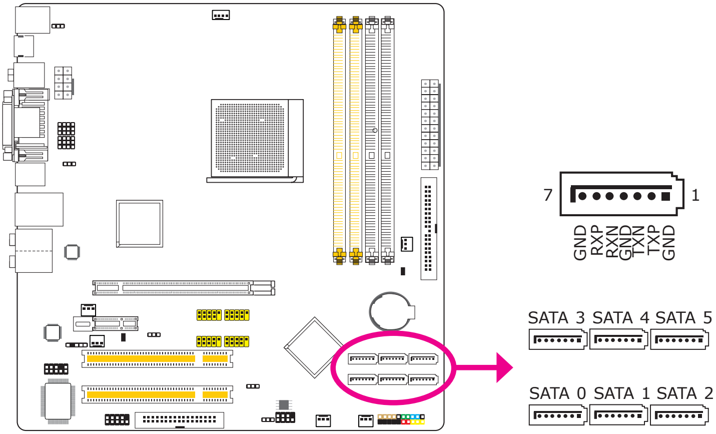
- Mic-in Jack (Pink)
  This jack is used to connect an external microphone.

Front Audio

The front audio connector is used to connect to the line-out and mic-in jacks that are at the front panel of your system.

Internal I/O Connectors

Serial ATA Connectors

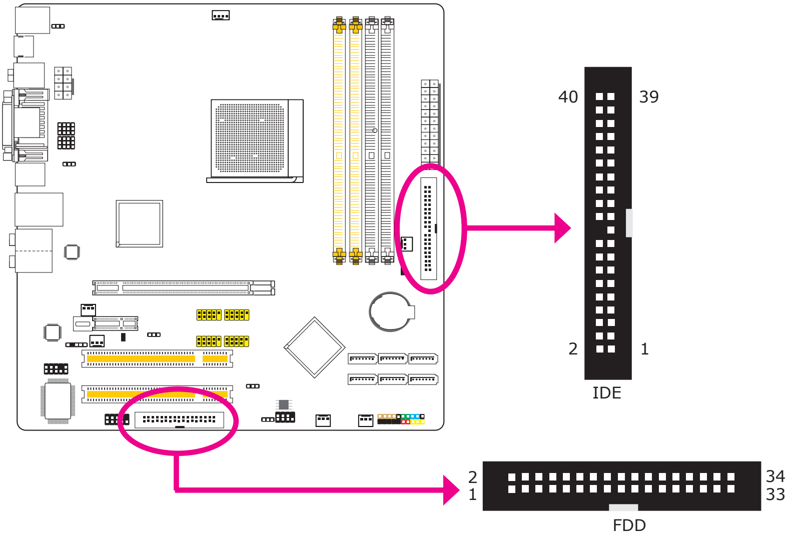

7
1
GND
RXP
RXN
GND
TXN
TXP
GND
SATA 3
SATA 4
SATA 5
SATA 0
SATA 1
SATA 2

The Serial ATA (SATA) connectors are used to connect Serial ATA drives. Connect one end of the Serial ATA cable to a Serial ATA connector and the other end to your Serial ATA device.

Configuring RAID

Refer to the RAID chapter in this manual for more information about creating RAID on Serial ATA drives.

FDD Connector and IDE Connector



FDD Connector

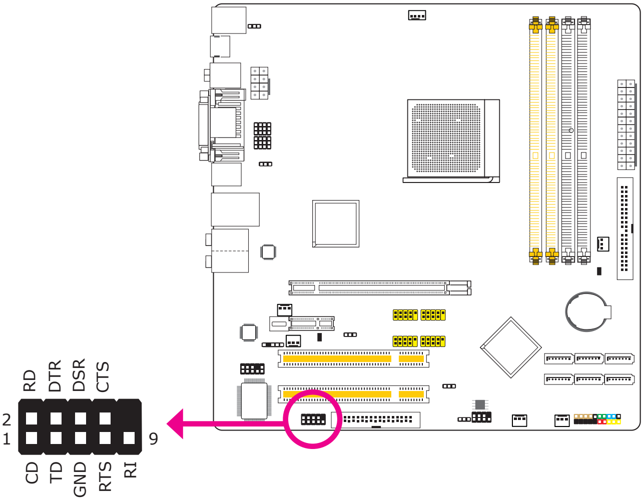
The floppy disk drive connector is used to connect a floppy drive. Insert one end of the floppy cable into this connector and the other end-most connector to the floppy drive. The colored edge of the cable should align with pin 1 of this connector.

IDE Connector

The IDE disk drive connector is used to connect 2 IDE disk drives. An IDE cable have 3 connectors on them, one that plugs into this connector and the other 2 connects to IDE devices. The connector at the end of the cable is for the Master drive and the connector in the middle of the cable is for the Slave drive. The colored edge of the cable should align with pin 1 of this connector.

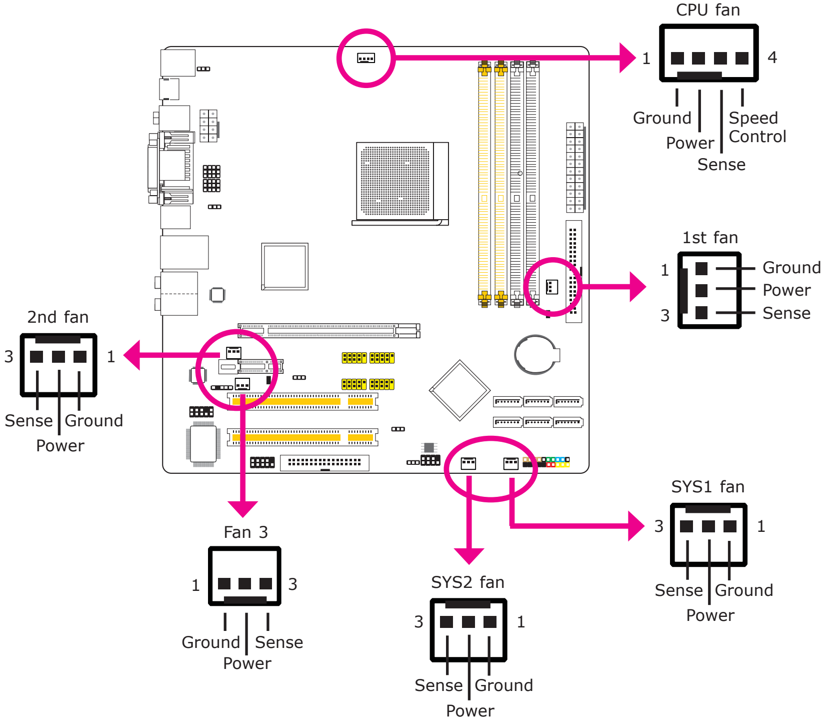
Note:
When using two IDE drives, one must be set as the master and the other as the slave. Follow the instructions provided by the drive manufacturer for setting the jumpers and/or switches on the drives.

Serial (COM) Connector



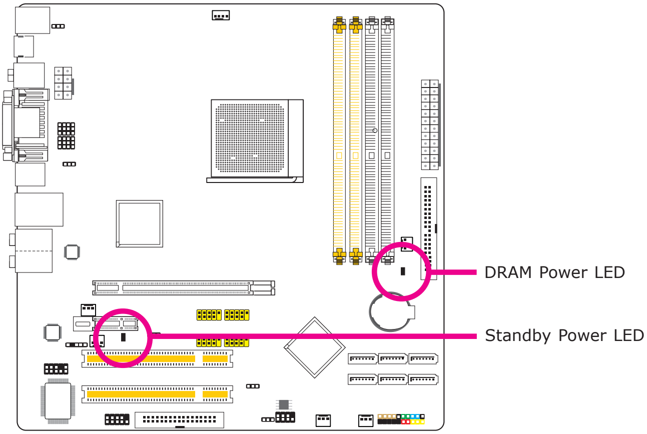
The serial (COM) connector is used to connect modems, serial printers, remote display terminals, or other serial devices. Your COM port may come mounted on a card-edge bracket. Install the card-edge bracket to an available slot at the rear of the system chassis then connect the serial port cable to this connector. The colored edge of the cable should align with pin 1 of this connector.

Cooling Fan Connectors


CPU fan
1
4
Ground
Power
Sense
Speed Control
1st fan
1
3
Ground
Power
Sense
2nd fan
3
1
Sense
Ground
Power
Fan 3
1
3
Ground
Sense
Power
SYS2 fan
3
1
Sense
Ground
Power
SYS1 fan
3
1
Sense
Ground
Power

These fan connectors are used to connect cooling fans. Cooling fans will provide adequate airflow throughout the chassis to prevent overheating the CPU and system board components.

LEDs



DRAM Power LED

This LED will light when the system’s power is on.

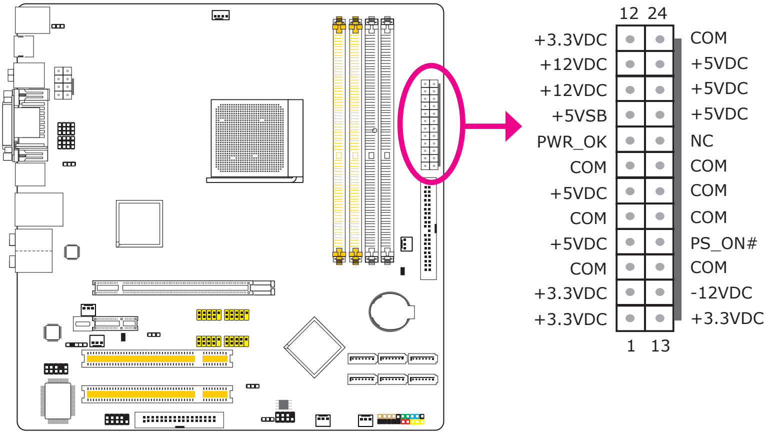
Standby Power LED

This LED will light when the system is in the standby mode.

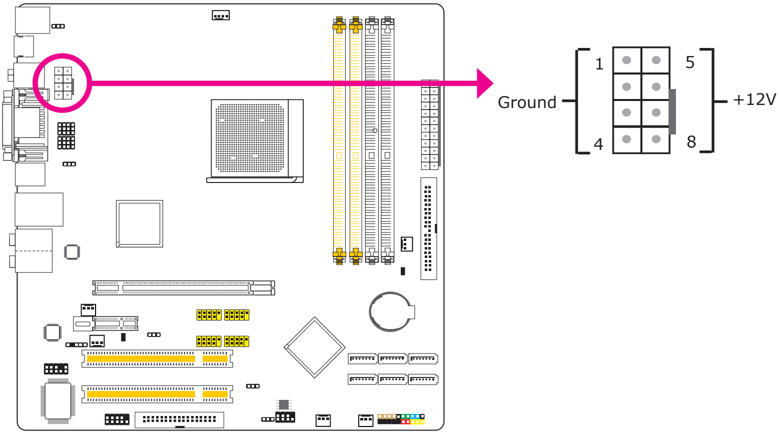
Important:
When the DRAM Power LED and/or Standby Power LED lit red, it indicates that power is present on the DIMM sockets and/or PCI slots. Power-off the PC then unplug the power cord prior to installing any memory modules or add-in cards. Failure to do so will cause severe damage to the motherboard and components.

Power Connectors

Use a power supply that complies with the ATX12V Power Supply Design Guide Version 1.1. An ATX12V power supply unit has a standard 24-pin ATX main power connector that must be inserted into this connector.


12
24
+3.3VDC
COM
+12VDC
+5VDC
+12VDC
+5VDC
+5VSB
+5VDC
PWR_OK
NC
COM
COM
+5VDC
COM
COM
COM
+5VDC
PS_ON#
COM
COM
+3.3VDC
-12VDC
+3.3VDC
+3.3VDC
1
13

Your power supply unit may come with an 8-pin or 4-pin +12V power connector. The +12V power enables the delivery of more +12VDC current to the processor's Voltage Regulator Module (VRM). If available, it is preferable to use the 8-pin power; otherwise connect a 4-pin power to this connector.


1
5
Ground
+12V
4
8

The power connectors from the power supply unit are designed to fit the 24-pin and 8-pin connectors in only one orientation. Make sure to find the proper orientation before plugging the connectors.

The system board requires a minimum of 300 Watt power supply to operate. Your system configuration (CPU power, amount of memory, add-in cards, peripherals, etc.) may exceed the minimum power requirement. To ensure that adequate power is provided, we strongly recommend that you use a minimum of 400 Watt (or greater) power supply.

Important:
Insufficient power supplied to the system may result in instability or the add-in boards and peripherals not functioning properly. Calculating the system's approximate power usage is important to ensure that the power supply meets the system's consumption requirements.

Restarting the PC

Normally, you can power-off the PC by:

1. Pressing the power button at the front panel of the chassis.

   or

2. Pressing the power switch that is on the system board (note: not all system boards come with this switch).

If for some reasons you need to totally cut off the power supplied to the PC, switch off the power supply or unplug the power cord. Take note though that if you intend to restart it at once, please strictly follow the steps below.

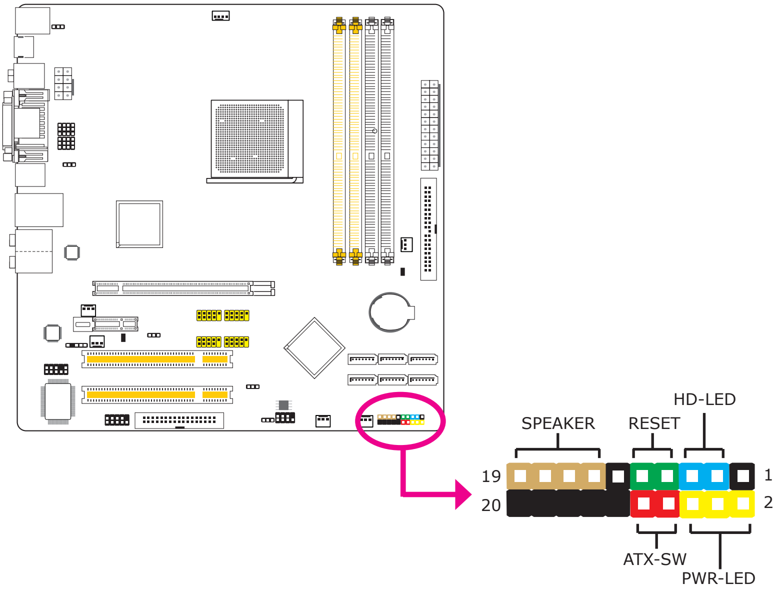
1. The time where power is totally discharged varies among power supplies. It's discharge time is highly dependent on the system's configuration such as the wattage of the power supply, the sequence of the supplied power as well as the number of peripheral devices connected to the system. Due to this reason, we strongly recommend that you wait for the Standby Power LED (refer to the "LEDs" section in this chapter for the location of the Standby Power LED) to lit off.

2. After the Standby Power LED has lit off, wait for 6 seconds before powering on the PC.

   If the system board is already enclosed in a chassis which apparently will not make the Standby Power LED visible, wait for 15 seconds before you restore power connections. 15 seconds is approximately the time that will take the LED to lit off and the time needed before restoring power.

The above will ensure protection and prevent damage to the motherboard and components.

Front Panel Connectors



HD-LED: Primary/Secondary IDE LED

This LED will light when the hard drive is being accessed.

RESET: Reset Switch

This switch allows you to reboot without having to power off the system thus prolonging the life of the power supply or system.

SPEAKER: Speaker Connector

This connects to the speaker installed in the system chassis.

ATX-SW: ATX Power Switch

Depending on the setting in the BIOS setup, this switch is a “dual function power button” that will allow your system to enter the Soft-Off or Suspend mode.

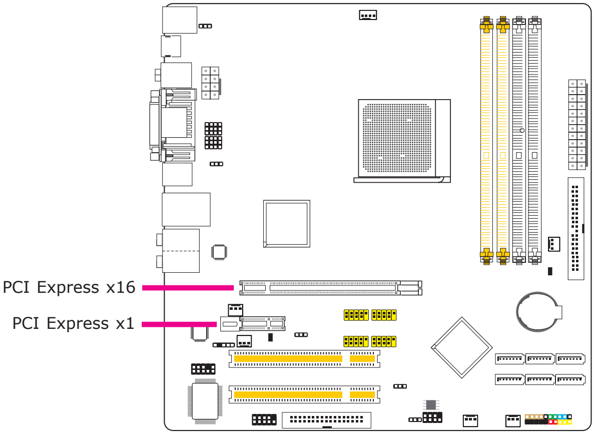
PWR-LED: Power/Standby LED

When the system's power is on, this LED will light. When the system is in the S1 (POS - Power On Suspend) or S3 (STR - Suspend To RAM) state, it will blink every second.

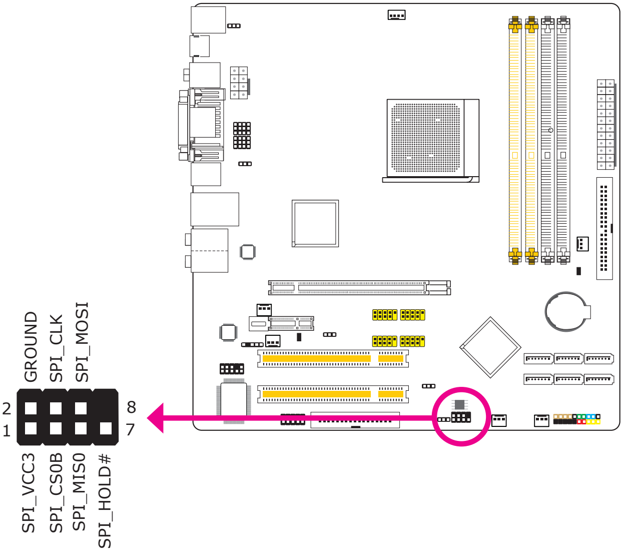
Note:
If a system did not boot-up and the Power/Standby LED did not light after it was powered-on, it may indicate that the CPU or memory module was not installed properly. Please make sure they are properly inserted into their corresponding socket.

	Pin	Pin Assignment
HD-LED (Primary/Secondary IDE LED)	3 5	HDD LED Power HDD
Reserved	14 16	N. C. N. C.
ATX-SW (ATX power switch)	8 10	PWRBT+ PWRBT-
Reserved	18 20	N. C. N. C.
RESET (Reset switch)	7 9	Ground H/W Reset
SPEAKER (Speaker connector)	13 15 17 19	Speaker Data N. C. Ground Speaker Power
PWR-LED (Power/Standby LED)	2 4 6	LED Power (+) LED Power (+) LED Power (-) or Standby Signal

PCI Express Slots


PCI Express x16
PCI Express x1

Download Flash BIOS Connector


GROUND
SPI_CLK
SPI_MOSI
2
1
8
7
SPI_VCC3
SPI_CS0B
SPI_MISO
SPI_HOLD#

Chapter 3 - BIOS Setup

Switchable Modes for Overclocking

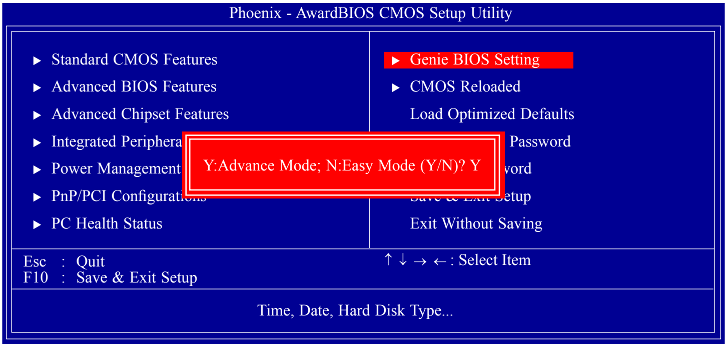
Aimed to provide convenience and superb overclockability, the Genie BIOS Setting submenu comes available in Easy mode (default mode) and Advance mode.

Easy Mode

Easy mode displays fields commonly used by users.

Advance Mode

If you intend to tweak your PC or boost its overclock feature, you can switch the Genie BIOS Setting submenu from Easy mode to Advance mode by simply pressing <F9> in the main menu of the Award BIOS utility then pressing <Y> to select Advance Mode. The Advance mode will display a wide range of fields useful in overclocking the board.



Phoenix - AwardBIOS CMOS Setup Utility

▶ Standard CMOS Features
▶ Advanced BIOS Features
▶ Advanced Chipset Features
▶ Integrated Periphera
▶ Power Management
▶ PnP/PCI Configurati
▶ PC Health Status

▶ Genie BIOS Setting
▶ CMOS Reloaded
Load Optimized Defaults
Password
vord
etup
Exit Without Saving

Y:Advance Mode; N:Easy Mode (Y/N)? Y

Esc : Quit
F10 : Save & Exit Setup
↑ ↓ → ← : Select Item

Time, Date, Hard Disk Type...

Award BIOS Setup Utility

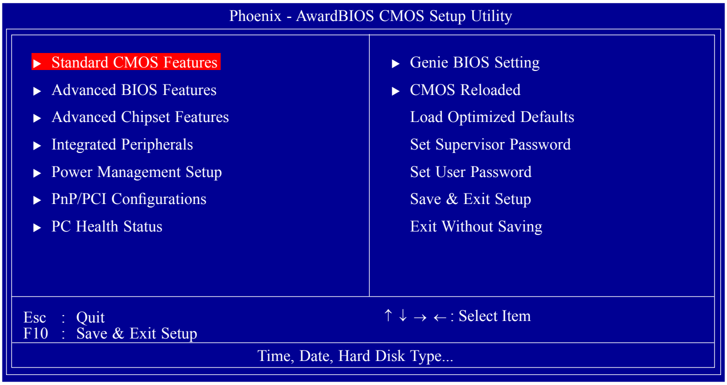
The Basic Input/Output System (BIOS) is a program that takes care of the basic level of communication between the processor and peripherals. In addition, the BIOS also contains codes for various advanced features found in this system board. This chapter explains the Setup Utility for the Award BIOS.

After you power up the system, the BIOS message appears on the screen and the memory count begins. After the memory test, the following message will appear on the screen:

Press DEL to enter setup

If the message disappears before you respond, restart the system or press the "Reset" button. You may also restart the system by pressing the <Ctrl> <Alt> and <Del> keys simultaneously.

When you press <Del>, the main menu screen will appear.



Phoenix - AwardBIOS CMOS Setup Utility

- ▶ Standard CMOS Features
- ▶ Advanced BIOS Features
- ▶ Advanced Chipset Features
- ▶ Integrated Peripherals
- ▶ Power Management Setup
- ▶ PnP/PCI Configurations
- ▶ PC Health Status

- ▶ Genie BIOS Setting
- ▶ CMOS Reloaded
- Load Optimized Defaults
- Set Supervisor Password
- Set User Password
- Save & Exit Setup
- Exit Without Saving

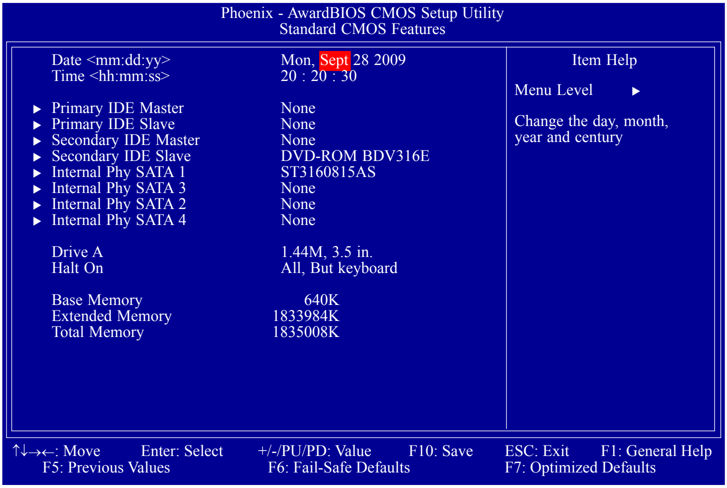
Esc : Quit
F10 : Save & Exit Setup

↑ ↓ → ← : Select Item

Time, Date, Hard Disk Type...

Standard CMOS Features

Use the arrow keys to highlight "Standard CMOS Features" then press <Enter>. A screen similar to the one below will appear.



```
                    Phoenix - AwardBIOS CMOS Setup Utility
                           Standard CMOS Features

     Date <mm:dd:yy>           Mon, Sept 28 2009           Item Help
     Time <hh:mm:ss>           20 : 20 : 30
                                                      Menu Level      ▶
  ▶  Primary IDE Master        None
  ▶  Primary IDE Slave         None                   Change the day, month,
  ▶  Secondary IDE Master      None                   year and century
  ▶  Secondary IDE Slave       DVD-ROM BDV316E
  ▶  Internal Phy SATA 1       ST3160815AS
  ▶  Internal Phy SATA 3       None
  ▶  Internal Phy SATA 2       None
  ▶  Internal Phy SATA 4       None

     Drive A                   1.44M, 3.5 in.
     Halt On                   All, But keyboard

     Base Memory                  640K
     Extended Memory           1833984K
     Total Memory              1835008K

↑↓→←: Move    Enter: Select    +/-/PU/PD: Value    F10: Save    ESC: Exit    F1: General Help
   F5: Previous Values            F6: Fail-Safe Defaults          F7: Optimized Defaults
```

The settings on the screen are for reference only. Your version may not be identical to this one.

Date

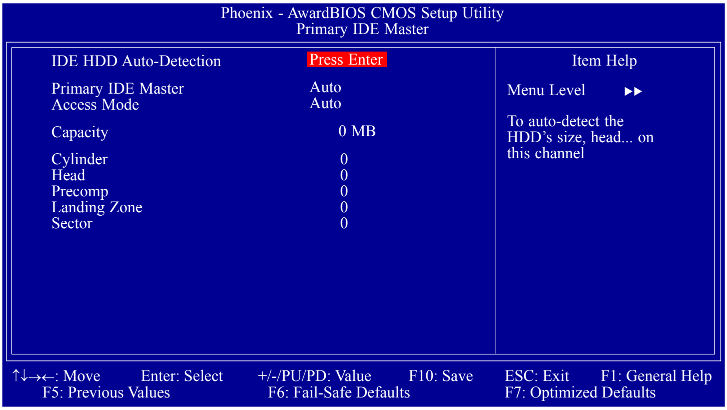
The date format is <day>, <month>, <date>, <year>. Day displays a day, from Sunday to Saturday. Month displays the month, from January to December. Date displays the date, from 1 to 31. Year displays the year, from 1994 to 2079.

Time

The time format is <hour>, <minute>, <second>. The time is based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00. Hour displays hours from 00 to 23. Minute displays minutes from 00 to 59. Second displays seconds from 00 to 59.

Primary IDE Master to Secondary IDE Slave

These fields are used to configure Parallel ATA drives. Move the cursor to a field then press <Enter>. The following screen will appear.



```
                 Phoenix - AwardBIOS CMOS Setup Utility
                          Primary IDE Master

   IDE HDD Auto-Detection       Press Enter        Item Help

   Primary IDE Master           Auto               Menu Level    ▶▶
   Access Mode                  Auto
                                                   To auto-detect the
   Capacity                       0 MB             HDD's size, head... on
                                                   this channel
   Cylinder                       0
   Head                           0
   Precomp                        0
   Landing Zone                   0
   Sector                         0

↑↓→←: Move    Enter: Select    +/-/PU/PD: Value    F10: Save    ESC: Exit    F1: General Help
   F5: Previous Values       F6: Fail-Safe Defaults       F7: Optimized Defaults
```

The settings on the screen are for reference only. Your version may not be identical to this one.

IDE HDD Auto-Detection

Detects the parameters of the drive. The parameters will automatically be shown on the screen.

Primary IDE Master to Secondary IDE Slave

If you select ”Auto”, the BIOS will auto-detect the HDD & CD-ROM drive at the POST stage and show the IDE for the HDD & CD-ROM drive. If a hard disk has not been installed, select “None”.

Access Mode

For hard drives larger than 528MB, you would typically select the LBA type. Certain operating systems require that you select CHS or Large. Please check your operating system’s manual or Help desk on which one to select.

Capacity

Displays the approximate capacity of the disk drive. Usually the size is slightly greater than the size of a formatted disk given by a disk checking program.

Cylinder

This field displays the number of cylinders.

Head

This field displays the number of read/write heads.

Precomp

This field displays the number of cylinders at which to change the write timing.

Landing Zone

This field displays the number of cylinders specified as the landing zone for the read/write heads.

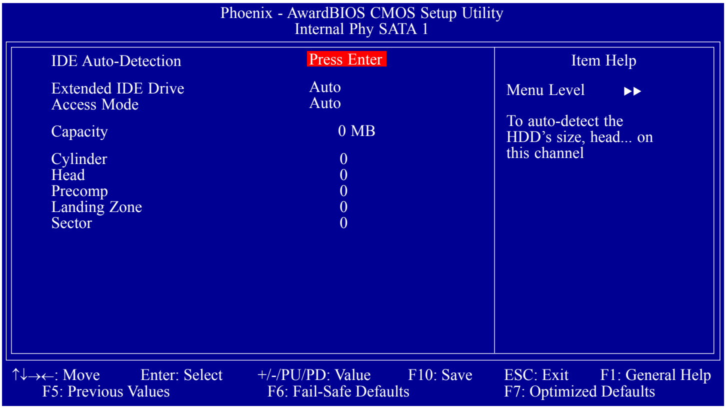
Sector

This field displays the number sectors per track.

Internal Phy SATA 1 to Internal Phy SATA 4

These fields are used to configure Serial ATA drives. Move the cursor to a field then press <Enter>. The following screen will appear.

Note:
The fields for configuring Serial ATA drives will appear only if the Serial ATA function is Enabled. Enable this function in the Integrated Peripherals submenu of the BIOS.



```
                 Phoenix - AwardBIOS CMOS Setup Utility
                          Internal Phy SATA 1
   IDE Auto-Detection          Press Enter           Item Help

   Extended IDE Drive          Auto                 Menu Level     ▶▶
   Access Mode                 Auto
                                                    To auto-detect the
   Capacity                       0 MB              HDD's size, head... on
                                                    this channel
   Cylinder                       0
   Head                           0
   Precomp                        0
   Landing Zone                   0
   Sector                         0

↑↓→←: Move   Enter: Select   +/-/PU/PD: Value   F10: Save   ESC: Exit   F1: General Help
   F5: Previous Values       F6: Fail-Safe Defaults         F7: Optimized Defaults
```

The settings on the screen are for reference only. Your version may not be identical to this one.

Drive A

This field identifies the type of floppy disk drive installed.

None
No floppy drive is installed

360K, 5.25 in.
5-1/4 in. standard drive; 360KB capacity

1.2M, 5.25 in.
5-1/4 in. AT-type high-density drive; 1.2MB capacity

720K, 3.5 in.
3-1/2 in. double-sided drive; 720KB capacity

1.44M, 3.5 in.
3-1/2 in. double-sided drive; 1.44MB capacity

2.88M, 3.5 in.
3-1/2 in. double-sided drive; 2.88MB capacity

Halt On

This field determines whether the system will stop if an error is detected during power up. The default setting is All Errors.

No Errors
The system boot will not stop for any errors detected.

All Errors
The system boot will stop whenever the BIOS detects a non-fatal error.

All, But Keyboard
The system boot will not stop for a keyboard error; it will stop for all other errors.

All, But Diskette
The system boot will not stop for a disk error; it will stop for all other errors.

All, But Disk/Key
The system boot will not stop for a disk or keyboard error; it will stop for all other errors.

Base Memory

Displays the amount of base (or conventional) memory installed in the system. The value of the base memory is typically 512K for systems with 512K memory installed on the motherboard or 640K for systems with 640K or more memory installed on the motherboard.

Extended Memory

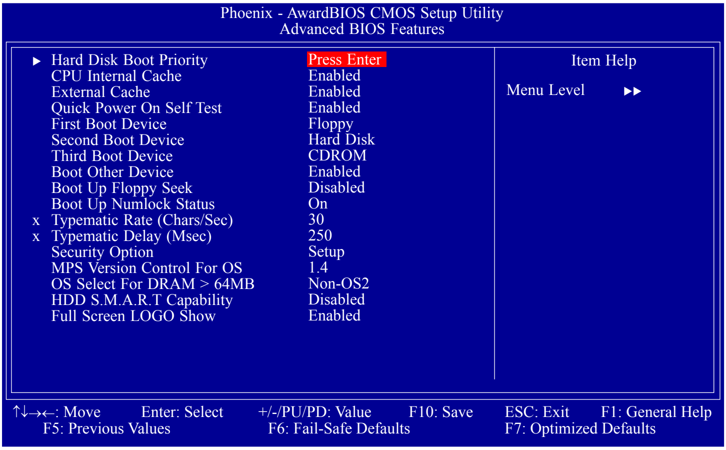
Displays the amount of extended memory detected during boot-up.

Total Memory

Displays the total memory available in the system.

Advanced BIOS Features

The Advanced BIOS Features allows you to configure your system for basic operation. Some entries are defaults required by the system board, while others, if enabled, will improve the performance of your system or let you set some features according to your preference.



```
                 Phoenix - AwardBIOS CMOS Setup Utility
                         Advanced BIOS Features

 ▶ Hard Disk Boot Priority          Press Enter          Item Help
   CPU Internal Cache               Enabled
   External Cache                   Enabled          Menu Level    ▶▶
   Quick Power On Self Test         Enabled
   First Boot Device                Floppy
   Second Boot Device               Hard Disk
   Third Boot Device                CDROM
   Boot Other Device                Enabled
   Boot Up Floppy Seek              Disabled
   Boot Up Numlock Status           On
 x Typematic Rate (Chars/Sec)       30
 x Typematic Delay (Msec)           250
   Security Option                  Setup
   MPS Version Control For OS       1.4
   OS Select For DRAM > 64MB        Non-OS2
   HDD S.M.A.R.T Capability         Disabled
   Full Screen LOGO Show            Enabled

↑↓→←: Move    Enter: Select    +/-/PU/PD: Value    F10: Save    ESC: Exit    F1: General Help
    F5: Previous Values          F6: Fail-Safe Defaults          F7: Optimized Defaults
```

The settings on the screen are for reference only. Your version may not be identical to this one.

Hard Disk Boot Priority

Refer to the next section for more information on this submenu.

CPU Internal Cache and External Cache

These fields speed up the memory access. The default is Enabled, which provides better performance by enabling cache.

Quick Power On Self Test

This field speeds up Power On Self Test (POST) whenever the system is powered on. The BIOS will shorten or skip some check items during POST. To attain the shortest POST time, select "Fast".

First Boot Device, Second Boot Device, Third Boot Device and Boot Other Device

Select the drive to boot first, second and third in the "First Boot Device" "Second Boot Device" and "Third Boot Device" fields respectively. The BIOS will boot the operating system according to the sequence of the drive selected. Set "Boot Other Device" to Enabled if you wish to boot from another device.

Boot Up Floppy Seek

When enabled, the BIOS will check whether the floppy disk drive installed is 40 or 80 tracks. Note that the BIOS cannot distinguish between 720K, 1.2M, 1.44M and 2.88M drive types as they are all 80 tracks. When disabled, the BIOS will not search for the type of floppy disk drive by track number. Note that there will not be any warning message if the drive installed is 360KB.

Boot Up NumLock Status

This allows you to determine the default state of the numeric keypad. By default, the system boots up with NumLock on wherein the function of the numeric keypad is the number keys. When set to Off, the function of the numeric keypad is the arrow keys.

Typematic Rate (Chars/Sec)

This field allows you to select the rate at which the keys are accelerated.

Typematic Delay (Msec)

This field allows you to select the delay between when the key was first depressed and when the acceleration begins.

Security Option

This field determines when the system will prompt for the password- everytime the system boots or only when you enter the BIOS setup. Set the password in the Set Supervisor/User Password submenu.

> *System*
> The system will not boot and access to Setup will be denied unless the correct password is entered at the prompt.
>
> *Setup*
> The system will boot, but access to Setup will be denied unless the correct password is entered at the prompt.

MPS Version Control for OS

This field is used to select the MPS version that the system board is using.

OS Select for DRAM > 64MB

This field allows you to access the memory that is over 64MB in OS/2.

HDD S.M.A.R.T Capability

The system board supports SMART (Self-Monitoring, Analysis and Reporting Technology) hard drives. SMART is a reliability prediction technology for ATA/IDE and SCSI drives. The drive will provide sufficient notice to the system or user to backup data prior to the drive's failure. The default is Disabled. If you are using hard drives that support S.M.A.R.T., set this field to Enabled. SMART is supported in ATA/33 or later hard drives.

Full Screen Logo Show

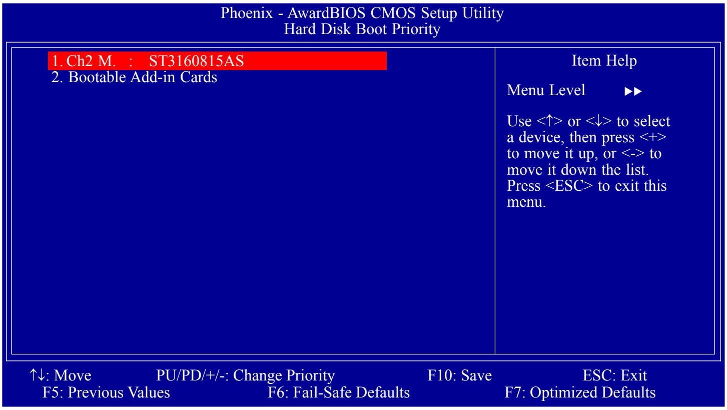
This field is applicable only if you want a particular logo to appear during system boot-up.

Enabled
The logo will appear in full screen during system boot-up.

Disabled
The logo will not appear during system boot-up.

Hard Disk Boot Priority

This field is used to select the boot sequence of the hard drives. Move the cursor to this field then press <Enter>. Use the Up or Down arrow keys to select a device then press <+> to move it up or <-> to move it down the list.



Phoenix - AwardBIOS CMOS Setup Utility
Hard Disk Boot Priority

1. Ch2 M. : ST3160815AS
2. Bootable Add-in Cards

Item Help

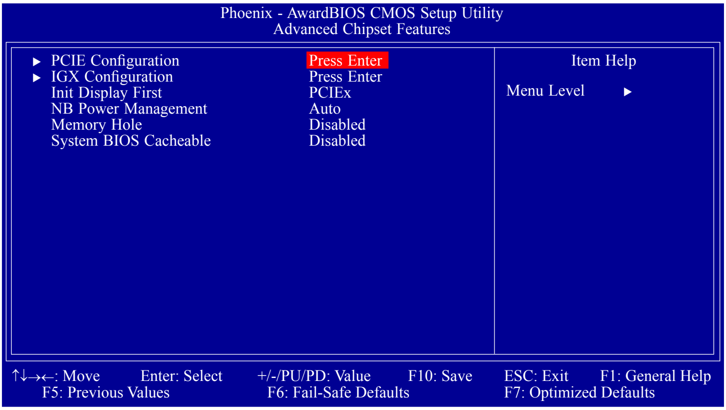
Menu Level ▶▶

Use <↑> or <↓> to select a device, then press <+> to move it up, or <-> to move it down the list. Press <ESC> to exit this menu.

↑↓: Move PU/PD/+/-: Change Priority F10: Save ESC: Exit
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

The settings on the screen are for reference only. Your version may not be identical to this one.

Advanced Chipset Features



```
              Phoenix - AwardBIOS CMOS Setup Utility
                    Advanced Chipset Features

 ► PCIE Configuration          Press Enter        Item Help
 ► IGX Configuration           Press Enter
   Init Display First          PCIEx              Menu Level  ►
   NB Power Management         Auto
   Memory Hole                 Disabled
   System BIOS Cacheable       Disabled

↑↓→←: Move   Enter: Select   +/-/PU/PD: Value   F10: Save   ESC: Exit   F1: General Help
   F5: Previous Values        F6: Fail-Safe Defaults        F7: Optimized Defaults
```

The settings on the screen are for reference only. Your version may not be identical to this one.

This section gives you functions to configure the system based on the specific features of the chipset. The chipset manages bus speeds and access to system memory resources. These items should not be altered unless necessary. The default settings have been chosen because they provide the best operating conditions for your system. The only time you might consider making any changes would be if you discovered some incompatibility or that data was being lost while using your system.

PCIE Configuration

IGX Configuration

Refer to the following pages for more information on these submenus.

Init Display First

IGX
When the system boots, it will first initialize the onboard VGA.

PCIEx
When the system boots, it will first initialize the PCI Express x16 graphics card.

NB Power Management

Dynamic clock gating for IOC/NT/MCU/CFG. The options are Auto, Enabled and Disabled.

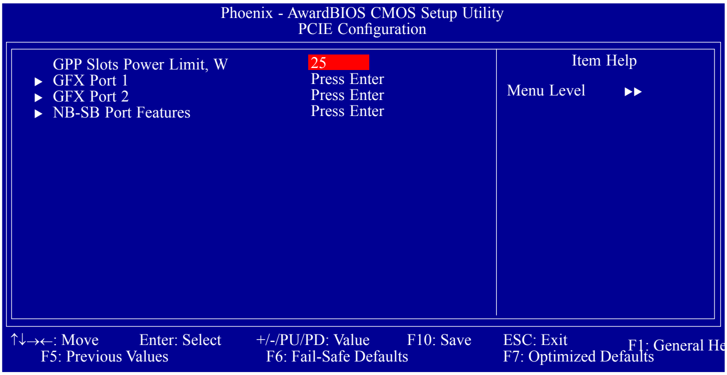
Memory Hole

In order to improve system performance, certain space in memory can be reserved for ISA cards. This memory must be mapped into the memory space below 16MB. When enabled, the CPU assumes the 15-16MB memory range is allocated to the hidden ISA address range instead of the actual system DRAM. When disabled, the CPU assumes the 15-16MB address range actually contains DRAM memory. If more than 16MB of system memory is installed, this field must be disabled to provide contiguous system memory.

System BIOS Cacheable

When this field is enabled, accesses to the system BIOS ROM addressed at F0000H-FFFFFH are cached, provided that the cache controller is enabled. The larger the range of the Cache RAM, the higher the efficiency of the system.

PCIE Configuration



Phoenix - AwardBIOS CMOS Setup Utility
PCIE Configuration

GPP Slots Power Limit, W	25	Item Help
▶ GFX Port 1	Press Enter	Menu Level ▶▶
▶ GFX Port 2	Press Enter	
▶ NB-SB Port Features	Press Enter	

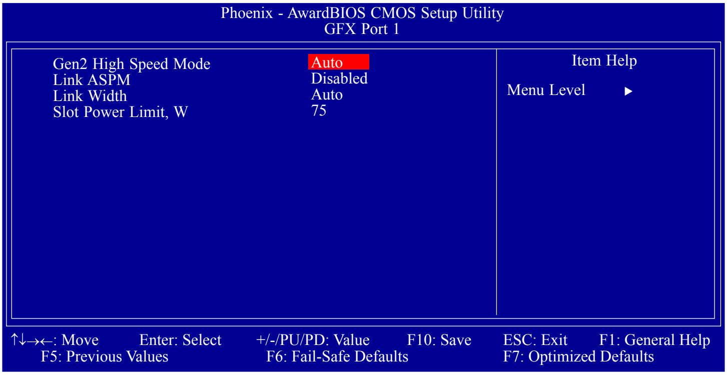
↑↓→←: Move
Enter: Select
+/-/PU/PD: Value
F10: Save
ESC: Exit
F1: General He
F5: Previous Values
F6: Fail-Safe Defaults
F7: Optimized Defaults

The settings on the screen are for reference only. Your version may not be identical to this one.

GPP Slots Power Limit, W

This field is used to enter the GPP's power limit. The minimum is 0 and the maximum is 255.

GFX Port 1 / GFX Port 2



Phoenix - AwardBIOS CMOS Setup Utility
GFX Port 1

Gen2 High Speed Mode	Auto	Item Help
Link ASPM	Disabled	Menu Level ▶
Link Width	Auto	
Slot Power Limit, W	75	

↑↓→←: Move
Enter: Select
+/-/PU/PD: Value
F10: Save
ESC: Exit
F1: General Help
F5: Previous Values
F6: Fail-Safe Defaults
F7: Optimized Defaults

The settings on the screen are for reference only. Your version may not be identical to this one.

Gen2 High Speed Mode

The options are Auto, Disabled, Software Initiated and Advertised RC.

Link ASPM

The options are Disabled, L0s, L1, and L0s & L1.

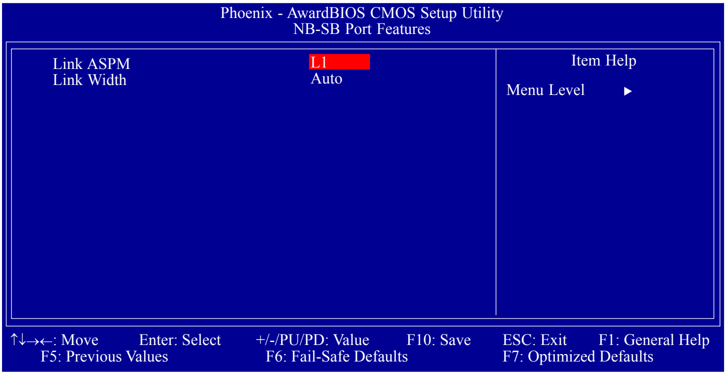
Link Width

The options are Auto, x1, x2, x4 and x8.

Slot Power Limit,W

This field is used to enter the slot's power limit. The minimum is 0 and the maximum is 255.

NB-SB Port Features



Phoenix - AwardBIOS CMOS Setup Utility
NB-SB Port Features

Link ASPM L1
Link Width Auto

Item Help
Menu Level ▶
↑↓→←: Move
Enter: Select
+/-/PU/PD: Value
F10: Save
ESC: Exit
F1: General Help
F5: Previous Values
F6: Fail-Safe Defaults
F7: Optimized Defaults

The settings on the screen are for reference only. Your version may not be identical to this one.

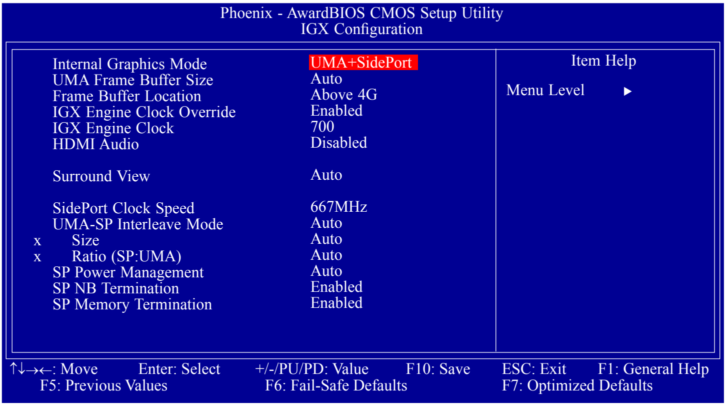
Link ASPM

The options are Disabled and L1.

Link Width

The options are Auto, x1, x2 and x4.

IGX Configuration



```
                 Phoenix - AwardBIOS CMOS Setup Utility
                          IGX Configuration

     Internal Graphics Mode           UMA+SidePort          Item Help
     UMA Frame Buffer Size            Auto
     Frame Buffer Location            Above 4G           Menu Level    ►
     IGX Engine Clock Override        Enabled
     IGX Engine Clock                 700
     HDMI Audio                       Disabled

     Surround View                    Auto

     SidePort Clock Speed             667MHz
     UMA-SP Interleave Mode           Auto
  x      Size                         Auto
  x      Ratio (SP:UMA)               Auto
     SP Power Management              Auto
     SP NB Termination                Enabled
     SP Memory Termination            Enabled

↑↓→←: Move    Enter: Select    +/-/PU/PD: Value    F10: Save    ESC: Exit    F1: General Help
   F5: Previous Values          F6: Fail-Safe Defaults          F7: Optimized Defaults
```

The settings on the screen are for reference only. Your version may not be identical to this one.

Internal Graphics Mode

This is used to configure the internal graphics mode. The options are Disabled, UMA and UMA+SidePort.

UMA Frame Buffer Size

This is used to select the total amount of system memory locked by the BIOS for video. A larger frame buffer size should result in higher video performance. The options are Auto, 32MB, 64MB, 128MB, 256MB and 512MB.

Frame Buffer Location

This is used to select the frame buffer’s location. The options are Below 4G and Above 4G.

IGX Engine Clock Override

The options are Enabled and Disabled.

IGX Engine Clock

This is used to enter the IGX engine clock. The minimum is 150 and the maximum is 1000.

HDMI Audio

This is used to enable or disable the HDMI audio.

Surround View

The options are Auto, Enabled and Disabled.

SidePort Clock Speed

This is used to select the SidePort's clock speed. The options are 400MHz, 533MHz and 667MHz.

UMA-SP Interleave Mode

The options are Auto and Fine.

Size

The options are Auto, 4MB, 8MB, 16MB, 32MB, 64MB and 128MB.

Ratio (SP:UMA)

The options are Auto, 1:1, 1:3, 1:7, 1:15, 3:5, 3:13, 5:11 and 7:9.

SP Power Management

The options are Auto, Dynamic CKE, Dynamic CMD, Dynamic CLK and Disable.

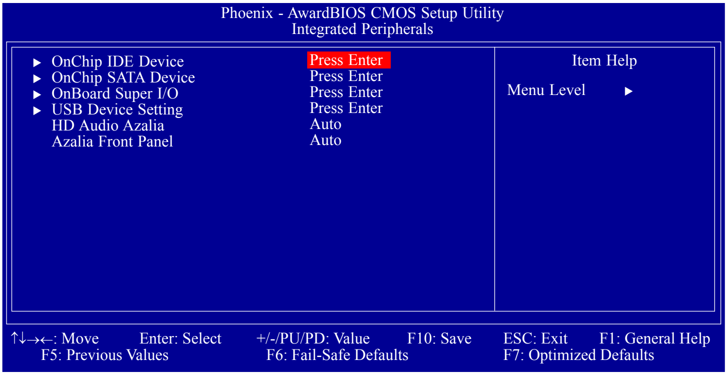
SP NB Termination

The options are Auto, Disabled and Enabled.

SP Memory Termination

The options are Auto, Disabled and Enabled.

Integrated Peripherals



```
                   Phoenix - AwardBIOS CMOS Setup Utility
                          Integrated Peripherals

 ▶ OnChip IDE Device          Press Enter          Item Help
 ▶ OnChip SATA Device         Press Enter
 ▶ OnBoard Super I/O          Press Enter      Menu Level    ▶
 ▶ USB Device Setting         Press Enter
   HD Audio Azalia            Auto
   Azalia Front Panel         Auto

↑↓→←: Move   Enter: Select   +/-/PU/PD: Value   F10: Save   ESC: Exit   F1: General Help
   F5: Previous Values        F6: Fail-Safe Defaults        F7: Optimized Defaults
```

The settings on the screen are for reference only. Your version may not be identical to this one.

OnChip IDE Device

OnChip SATA Device

OnBoard Super I/O

USB Device Setting

Refer to the following pages for more information on these submenus.

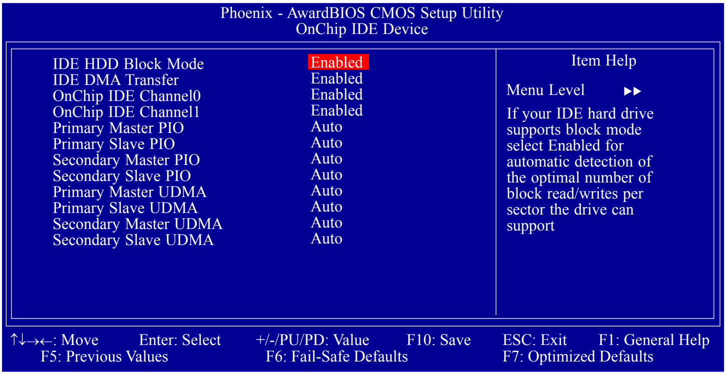
HD Audio Azalia

This field is used to enable or disable the onboard HD audio.

Azalia Front Panel

This field is used to enable or disable the Azalia front panel audio.

OnChip IDE Device



```
                    Phoenix - AwardBIOS CMOS Setup Utility
                              OnChip IDE Device

      IDE HDD Block Mode          Enabled           Item Help
      IDE DMA Transfer            Enabled
      OnChip IDE Channel0         Enabled        Menu Level    ▶▶
      OnChip IDE Channel1         Enabled
      Primary Master PIO          Auto           If your IDE hard drive
      Primary Slave PIO           Auto           supports block mode
      Secondary Master PIO        Auto           select Enabled for
      Secondary Slave PIO         Auto           automatic detection of
      Primary Master UDMA         Auto           the optimal number of
      Primary Slave UDMA          Auto           block read/writes per
      Secondary Master UDMA       Auto           sector the drive can
      Secondary Slave UDMA        Auto           support

↑↓→←: Move    Enter: Select    +/-/PU/PD: Value    F10: Save    ESC: Exit    F1: General Help
    F5: Previous Values          F6: Fail-Safe Defaults          F7: Optimized Defaults
```

The settings on the screen are for reference only. Your version may not be identical to this one.

IDE HDD Block Mode

Enabled
The IDE HDD uses the block mode. The system BIOS will check the hard disk drive for the maximum block size the system can transfer. The block size will depend on the type of hard disk drive.

Disabled
The IDE HDD uses the standard mode.

IDE DMA Transfer

Enabled
The IDE HDD uses the block mode. The system BIOS will check the hard disk drive for the maximum block size the system can transfer. The block size will depend on the type of hard disk drive.

Disabled
The IDE HDD uses the standard mode.

OnChip IDE Channel 0 and OnChip IDE Channel 1

These fields allow you to enable or disable the primary and secondary IDE controller. The default is Enabled. Select Disabled if you want to add a different hard drive controller.

Primary Master/Slave PIO to Secondary Master/Slave PIO

PIO means Programmed Input/Output. Rather than have the BIOS issue a series of commands to effect a transfer to or from the disk drive, PIO allows the BIOS to tell the controller what it wants and then let the controller and the CPU perform the complete task by themselves. Your system supports five modes, 0 (default) to 4, which primarily differ in timing. When Auto is selected, the BIOS will select the best available mode after checking your drive.

Auto
The BIOS will automatically set the system according to your hard disk drive's timing.

Mode 0-4
You can select a mode that matches your hard disk drive's timing. Caution: Do not use the wrong setting or you will have drive errors.

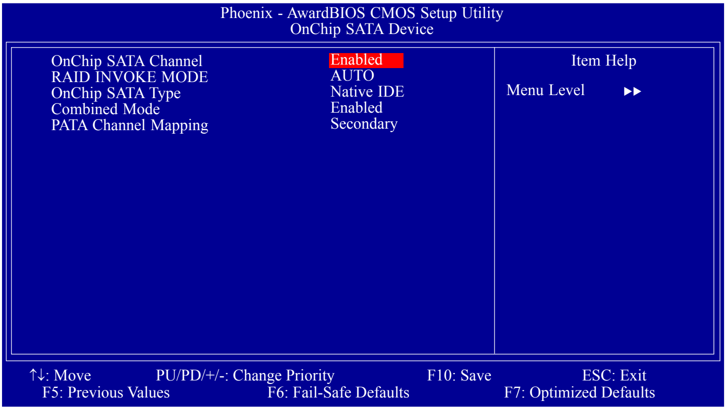
Primary Master/Slave UDMA to Secondary Master/Slave UDMA

These fields allow you to set the Ultra DMA in use. When Auto is selected, the BIOS will select the best available option after checking your hard drive or CD-ROM.

Auto
The BIOS will automatically detect the settings for you.

Disabled
The BIOS will not detect these categories.

OnChip SATA Device



Phoenix - AwardBIOS CMOS Setup Utility
OnChip SATA Device

```
OnChip SATA Channel          Enabled        Item Help
RAID INVOKE MODE             AUTO
OnChip SATA Type             Native IDE     Menu Level    ▶▶
Combined Mode                Enabled
PATA Channel Mapping         Secondary

↑↓: Move      PU/PD/+/-: Change Priority      F10: Save       ESC: Exit
   F5: Previous Values     F6: Fail-Safe Defaults     F7: Optimized Defaults
```

The settings on the screen are for reference only. Your version may not be identical to this one.

OnChip SATA Channel

This field is used to enable or disable the onboard SATA.

RAID Invoke Mode

The options are Auto, Biggest First and Smallest First.

OnChip SATA Type

This field is used to configure the SATA devices supported by the southbridge.

Native IDE
This option configures the Serial ATA drives as Parallel ATA storage devices.

RAID
This option allows you to create RAID on Serial ATA devices.

AHCI
This option allows the Serial ATA devices to use AHCI (Advanced Host Controller Interface).

Legacy IDE
This option configures the Serial ATA drives as Legacy IDE storage devices.

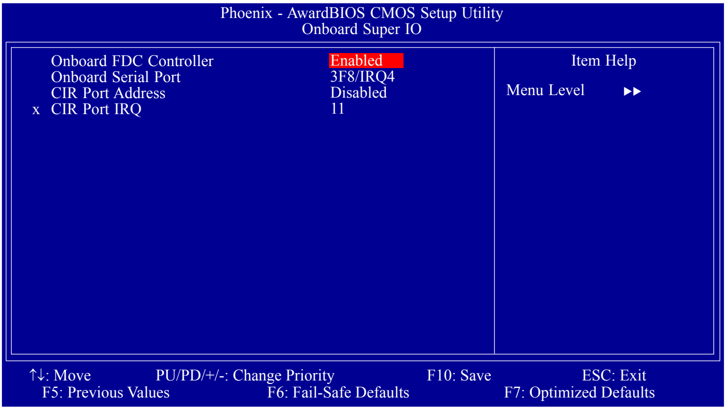
Combined Mode

This field is used to enable or disable the combined mode.

PATA Channel Mapping

The options are Primary and Secondary.

Onboard Super IO



```
              Phoenix - AwardBIOS CMOS Setup Utility
                        Onboard Super IO

     Onboard FDC Controller        Enabled          Item Help
     Onboard Serial Port           3F8/IRQ4
     CIR Port Address              Disabled      Menu Level    ▶▶
  x  CIR Port IRQ                  11

 ↑↓: Move     PU/PD/+/-: Change Priority     F10: Save     ESC: Exit
   F5: Previous Values     F6: Fail-Safe Defaults     F7: Optimized Defaults
```

The settings on the screen are for reference only. Your version may not be identical to this one.

Onboard FDC Controller

Enabled
Enables the onboard floppy disk controller.

Disabled
Disables the onboard floppy disk controller.

Onboard Serial Port

3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3
Allows you to manually select an I/O address for the onboard serial port.

Disabled
Disables the onboard serial port.

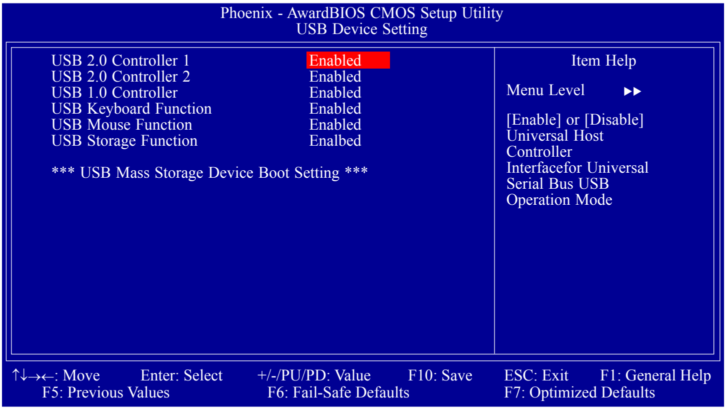
CIR Port Address

This field is used to select an I/O address for the CIR device.

CIR Port IRQ

This field is used to select an IRQ for the CIR device.

USB Device Setting



```
                 Phoenix - AwardBIOS CMOS Setup Utility
                          USB Device Setting

     USB 2.0 Controller 1              Enabled              Item Help
     USB 2.0 Controller 2              Enabled
     USB 1.0 Controller                Enabled          Menu Level      ▶▶
     USB Keyboard Function             Enabled
     USB Mouse Function                Enabled          [Enable] or [Disable]
     USB Storage Function              Enalbed          Universal Host
                                                        Controller
     *** USB Mass Storage Device Boot Setting ***       Interfacefor Universal
                                                        Serial Bus USB
                                                        Operation Mode

↑↓→←: Move    Enter: Select    +/-/PU/PD: Value    F10: Save    ESC: Exit    F1: General Help
   F5: Previous Values        F6: Fail-Safe Defaults           F7: Optimized Defaults
```

The settings on the screen are for reference only. Your version may not be identical to this one.

USB 2.0 Controller 1 / USB 2.0 Controller 2

This field is used to enable or disable the Enhanced Host Controller Interface (USB 2.0).

USB 1.0 Controller

This field is used to enable or disable the Universal Host Controller Interface (USB 1.0).

USB Keyboard Function

Due to the limited space of the BIOS ROM, the support for legacy USB keyboard (in DOS mode) is by default set to Disabled. With more BIOS ROM space available, it will be able to support more advanced features as well as provide compatibility to a wide variety of peripheral devices.

If a PS/2 keyboard is not available and you need to use a USB keyboard to install Windows (installation is performed in DOS mode) or run any program under DOS, set this field to Enabled.

USB Mouse Function

Due to the limited space of the BIOS ROM, the support for legacy USB mouse (in DOS mode) is by default set to Disabled. With more BIOS ROM space available, it will be able to support more advanced features as well as provide compatibility to a wide variety of peripheral devices.

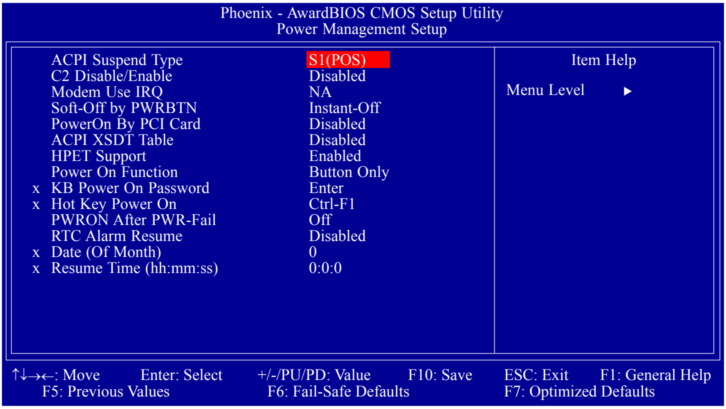
If a PS/2 mouse is not available and you need to use a USB mouse to install Windows (installation is performed in DOS mode) or run any program under DOS, set this field to Enabled.

USB Storage Function

This field is used to enable or disable the support for legacy USB mass storage.

Power Management Setup

The Power Management Setup allows you to configure your system to most effectively save energy.



```
                 Phoenix - AwardBIOS CMOS Setup Utility
                        Power Management Setup

     ACPI Suspend Type           S1(POS)              Item Help
     C2 Disable/Enable           Disabled
     Modem Use IRQ               NA                 Menu Level   ▶
     Soft-Off by PWRBTN          Instant-Off
     PowerOn By PCI Card         Disabled
     ACPI XSDT Table             Disabled
     HPET Support                Enabled
     Power On Function           Button Only
   x KB Power On Password        Enter
   x Hot Key Power On            Ctrl-F1
     PWRON After PWR-Fail        Off
     RTC Alarm Resume            Disabled
   x Date (Of Month)             0
   x Resume Time (hh:mm:ss)      0:0:0

↑↓→←: Move    Enter: Select    +/-/PU/PD: Value    F10: Save    ESC: Exit    F1: General Help
   F5: Previous Values         F6: Fail-Safe Defaults           F7: Optimized Defaults
```

The settings on the screen are for reference only. Your version may not be identical to this one.

ACPI Suspend Type

This field is used to select the type of Suspend mode.

S1(POS)
Enables the Power On Suspend function.

S3(STR)
Enables the Suspend to RAM function.

C2 Disable/Enable

The options are Enabled and Disabled.

MODEM Use IRQ

This field is used to select an IRQ channel for the modem installed in your system.

Soft-Off by PWRBTN

This field allows you to select the method of powering off your system.

Delay 4 Sec.
Regardless of whether the Power Management function is enabled or disabled, if the power button is pushed and released in less than 4 sec, the system enters the Suspend mode. The purpose of this function is to prevent the system from powering off in case you accidentally "hit" or pushed the power button. Push and release again in less than 4 sec to restore. Pushing the power button for more than 4 seconds will power off the system.

Instant-Off
Pressing and then releasing the power button at once will immediately power off your system.

PowerOn By PCI Card

Enabled
This field should be set to Enabled only if your PCI card such as LAN card or modem card uses the PCI PME (Power Management Event) signal to remotely wake up the system. Access to the LAN card or PCI card will cause the system to wake up. Refer to the card's documentation for more information.

Disabled
The system will not wake up despite access to the PCI card.

ACPI XSDT Table

Enable the ACPI XSDT table only when using a 64-bit mode OS. The table does not support 32-bit mode OS such as Windows 2000 and Windows XP.

HPET Support

The options are Enabled and Disabled.

Power On Function

This field allows you to use the PS/2 keyboard or PS/2 mouse to power-on the system.

Button only
Default setting. Uses the power button to power on the system.

Password
When this option is selected, set the password you would like to use to power-on the system in the "KB Power On Password" field.

Hot Key
When this option is selected, select the function key you would like to use to power-on the system in the "Hot Key Power On" field.

MS Move&Click
When this option is selected, move or click the mouse to power-on the system.

Any Key
Press any key to power-on the system.

Keyboard 98
When this option is selected, press the "wake up" key of the Windows 98 compatible keyboard to power-on the system.

KB Power On Password

Move the cursor to this field and press <Enter>. Enter your password. You can enter up to 5 characters. Type in exactly the same password to confirm, then press <Enter>.

The power button will not function once a keyboard password has been set in this field. You must type the correct password to power-on the system. If you forgot the password, power-off the system and remove the battery. Wait for a few seconds and install it back before powering-on the system.

Hot Key Power On

This field is used to select a function key that you would like to use to power-on the system.

PWRON After PWR-Fail

Off
When power returns after an AC power failure, the system's power is off. You must press the Power button to power-on the system.

On
When power returns after an AC power failure, the system will automatically power-on.

RTC Alarm Resume

Enabled
When Enabled, you can set the date and time you would like the Soft Power Down (Soft-Off) PC to power-on in the "Date (of Month)" and "Resume Time" fields. However, if the system is being accessed by incoming calls or the network (Resume On Ring/LAN) prior to the date and time set in these fields, the system will give priority to the incoming calls or network.

Disabled
Disables the automatic power-on function. (default).

Date (of Month)

0
The system will power-on everyday according to the time set in the "Time (hh:mm:ss) Alarm" field.

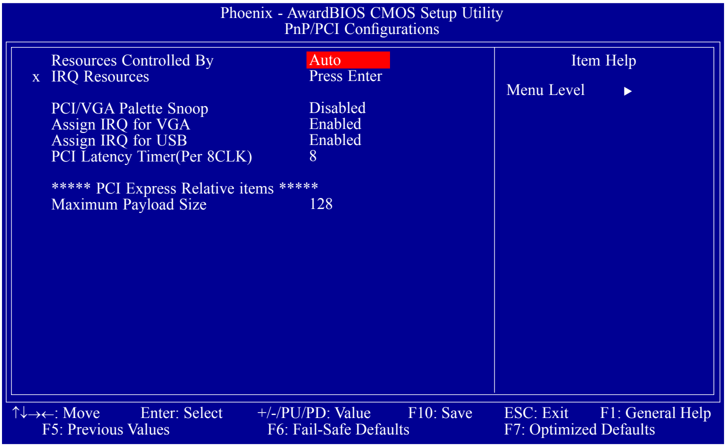
1-31
Select a date you would like the system to power-on. The system will power-on on the set date, and time set in the "Time (hh:mm:ss) Alarm" field.

Resume Time (hh:mm:ss)

This is used to set the time you would like the system to power-on. If you want the system to power-on everyday as set in the “Date (of Month) ” field, the time set in this field must be later than the time of the RTC set in the Standard CMOS Features submenu.

PnP/PCI Configurations

This section describes configuring the PCI bus system. It covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.



```
                  Phoenix - AwardBIOS CMOS Setup Utility
                          PnP/PCI Configurations

     Resources Controlled By            Auto              Item Help
   x IRQ Resources                      Press Enter
                                                          Menu Level    ▶
     PCI/VGA Palette Snoop              Disabled
     Assign IRQ for VGA                 Enabled
     Assign IRQ for USB                 Enabled
     PCI Latency Timer(Per 8CLK)        8

     ***** PCI Express Relative items *****
     Maximum Payload Size               128

↑↓→←: Move    Enter: Select    +/-/PU/PD: Value    F10: Save    ESC: Exit    F1: General Help
   F5: Previous Values          F6: Fail-Safe Defaults          F7: Optimized Defaults
```

The settings on the screen are for reference only. Your version may not be identical to this one.

Resources Controlled By

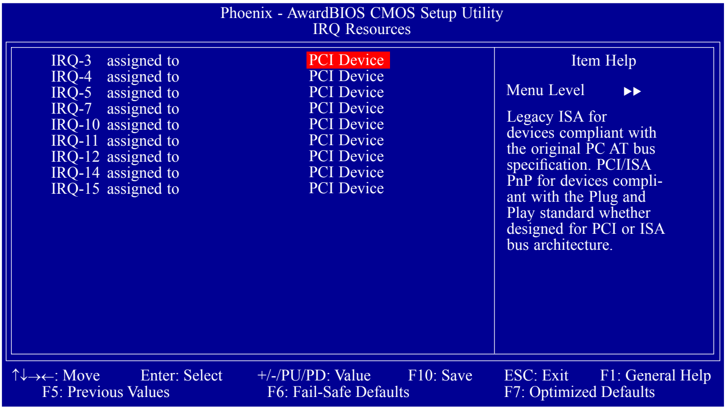
The Award Plug and Play BIOS has the capability to automatically configure all of the boot and Plug and Play compatible devices.

Auto(ESCD)
The system will automatically detect the settings for you.

Manual
Choose the specific IRQ in the "IRQ Resources" field.

IRQ Resources

Move the cursor to this field and press <Enter>. This field is used to set each system interrupt to either Reserved or PCI Device.



```
Phoenix - AwardBIOS CMOS Setup Utility
IRQ Resources

IRQ-3   assigned to          PCI Device     Item Help
IRQ-4   assigned to          PCI Device
IRQ-5   assigned to          PCI Device     Menu Level    ▸▸
IRQ-7   assigned to          PCI Device
IRQ-10  assigned to          PCI Device     Legacy ISA for
IRQ-11  assigned to          PCI Device     devices compliant with
IRQ-12  assigned to          PCI Device     the original PC AT bus
IRQ-14  assigned to          PCI Device     specification. PCI/ISA
IRQ-15  assigned to          PCI Device     PnP for devices compli-
                                            ant with the Plug and
                                            Play standard whether
                                            designed for PCI or ISA
                                            bus architecture.

↑↓→←: Move   Enter: Select   +/-/PU/PD: Value   F10: Save   ESC: Exit   F1: General Help
   F5: Previous Values       F6: Fail-Safe Defaults          F7: Optimized Defaults
```

The settings on the screen are for reference only. Your version may not be identical to this one.

PCI/VGA Palette Snoop

This field determines whether the MPEG ISA/VESA VGA cards can work with PCI/VGA or not. The default value is Disabled.

Enabled
MPEG ISA/VESA VGA cards work with PCI/VGA.

Disabled
MPEG ISA/VESA VGA cards does not work with PCI/VGA.

Assign IRQ for VGA

When Enabled, the system automatically assigns an IRQ for the VGA card installed. Your VGA card will need an IRQ only when using the video capture function of the card. If you are not using this function and a new device requires an IRQ, you can set this field to Disabled. The IRQ (previously occupied by the VGA card) will be available for your new device.

Assign IRQ for USB

When Enabled, the system automatically assigns an IRQ for the USB device connected to your system. However, if you are not using USB devices and an ISA slot requires an IRQ, set this field to Disabled. The IRQ previously occupied by the USB device will be available for the ISA slot.

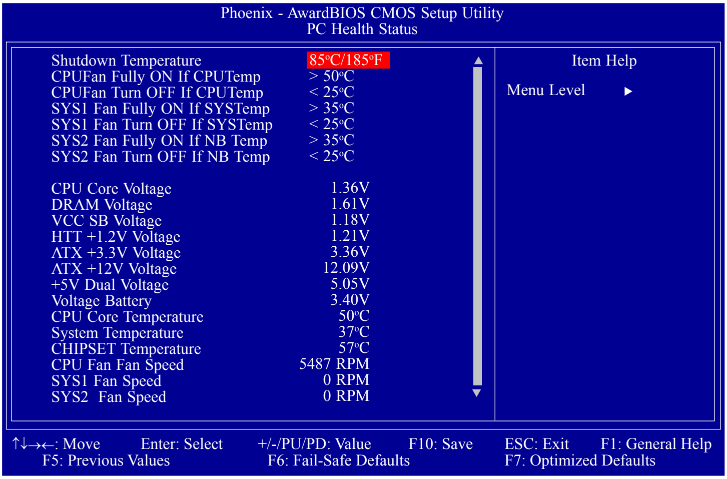
PCI Latency Timer (Per 8CLK)

This feature is used to select the length of time each PCI device will control the bus before another takes over. The larger the value, the longer the PCI device can retain control of the bus. Since each access to the bus comes with an initial delay before any transaction can be made, low values for the PCI Latency Timer will reduce the effectiveness of the PCI bandwidth while higher values will improve it.

Maximum Payload Size

This field is used to select the maximum TLP payload size of the PCI Express devices. The unit is byte.

PC Health Status



```
                 Phoenix - AwardBIOS CMOS Setup Utility
                            PC Health Status

   Shutdown Temperature            85ºC/185ºF                 Item Help
   CPUFan Fully ON If CPUTemp      > 50ºC
   CPUFan Turn OFF If CPUTemp      < 25ºC               Menu Level    ▶
   SYS1 Fan Fully ON If SYSTemp    > 35ºC
   SYS1 Fan Turn OFF If SYSTemp    < 25ºC
   SYS2 Fan Fully ON If NB Temp    > 35ºC
   SYS2 Fan Turn OFF If NB Temp    < 25ºC

   CPU Core Voltage                    1.36V
   DRAM Voltage                        1.61V
   VCC SB Voltage                      1.18V
   HTT +1.2V Voltage                   1.21V
   ATX +3.3V Voltage                   3.36V
   ATX +12V Voltage                   12.09V
   +5V Dual Voltage                    5.05V
   Voltage Battery                     3.40V
   CPU Core Temperature                 50ºC
   System Temperature                   37ºC
   CHIPSET Temperature                  57ºC
   CPU Fan Fan Speed                5487 RPM
   SYS1 Fan Speed                      0 RPM
   SYS2  Fan Speed                     0 RPM

↑↓→←: Move     Enter: Select     +/-/PU/PD: Value     F10: Save     ESC: Exit     F1: General Help
   F5: Previous Values            F6: Fail-Safe Defaults              F7: Optimized Defaults
```

The screen above list all the fields available in the PC Health Status submenu, for ease of reference in this manual. In the actual CMOS setup, you have to use the scroll bar to view the fields. The settings on the screen are for reference only. Your version may not be identical to this one.

Shutdown Temperature

You can prevent the system from overheating by selecting a temperature at which the system will shutdown. If the system detected that its temperature exceeded the one set in this field, it will automatically shutdown.

CPUFan Fully On If CPUTemp

This field is used to select the CPU's temperature at which the CPU fan will rotate at full speed.

CPUFan Turn Off If CPUTemp

This field is used to select the CPU's temperature at which the CPU fan will rotate at a start speed which is the slowest speed.

Note:

1. If the CPU temperature runs between the highest (set in the "CPUFan Fully On If CPUTemp" field) and lowest (set in the "CPUFan Turn Off If CPUTemp" field) temperature, the system will automatically adjust the CPU fan's speed according to the temperature.
2. If you want to reduce the CPU fan's noise or prevent CPU overheat, select a lower temperature in the "CPUFan Fully On If CPUTemp" field to allow the CPU fan to rotate full speed at the selected lower temperature.

SYS1 Fan Fully On If SYSTemp

This field is used to select the system’s temperature at which the chassis fan will rotate at full speed.

SYS1 Fan Turn Off If SYSTemp

This field is used to select the system’s temperature at which the chassis fan will rotate at a start speed which is the slowest speed.

Note:
If the system’s temperature runs between the highest (set in the “SYSFan Fully On If SYSTemp” field) and lowest (set in the ”SYSFan Turn Off If SYSTemp” field) temperature, the system will automatically adjust the chassis fan’s speed according to the temperature.

SYS2 Fan Fully On If NB Temp

This field is used to select the Northbridge chip’s temperature at which the chip’s fan will rotate at full speed.

SYS2 Fan Turn Off If NB Temp

This field is used to select the Northbridge chip’s temperature at which the chip’s fan will rotate at a start speed which is the slowest speed.

Note:
If the Northbridge chip’s temperature runs between the highest (set in the “NB Fan Fully On If NB Temp” field) and lowest (set in the “NB Fan Turn Off If NB Temp” field) temperature, the system will automatically adjust the fan speed of the Northbridge chip according to the temperature.

CPU Core Voltage to SYS2 Fan Speed

These fields will show the output voltage, temperature and fan speed of the monitored devices or components.

Genie BIOS Setting

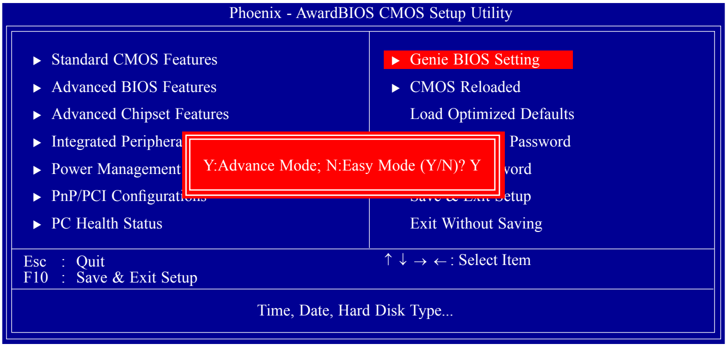
Aimed to provide convenience and superb overclockability, this submenu comes available in Easy mode (default mode) and Advance mode.

Easy Mode

Easy mode displays fields commonly used by users.

Advance Mode

If you intend to tweak your PC or boost its overclock features, you can switch the Genie BIOS Setting submenu from Easy mode to Advance mode by simply pressing <F9> in the main menu of the Award BIOS utility then pressing <Y> to select Advance Mode. The Advance mode will display a wide range of fields useful in overclocking the board.

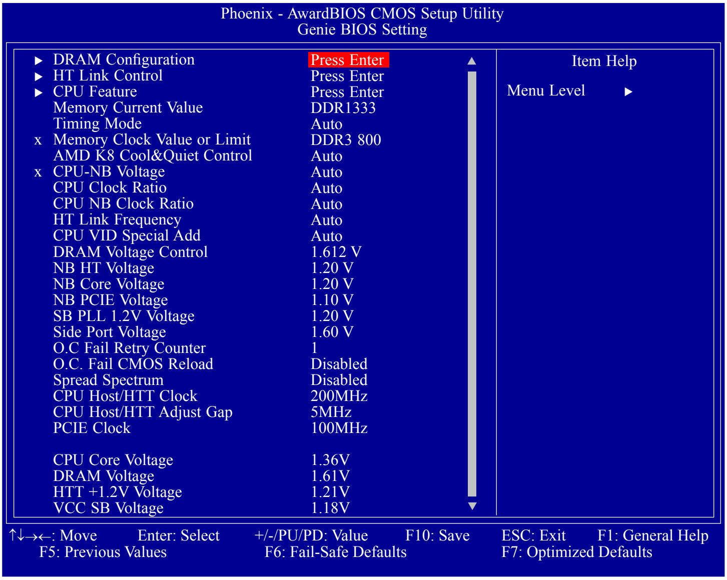


```
                    Phoenix - AwardBIOS CMOS Setup Utility

 ► Standard CMOS Features              ► Genie BIOS Setting
 ► Advanced BIOS Features              ► CMOS Reloaded
 ► Advanced Chipset Features             Load Optimized Defaults
 ► Integrated Periphera                           Password
 ► Power Management     Y:Advance Mode; N:Easy Mode (Y/N)? Y   vord
 ► PnP/PCI Configurati                           etup
 ► PC Health Status                      Exit Without Saving

 Esc  :  Quit                          ↑ ↓ → ←: Select Item
 F10  :  Save & Exit Setup

                      Time, Date, Hard Disk Type...
```



```
                 Phoenix - AwardBIOS CMOS Setup Utility
                           Genie BIOS Setting

 ▶ DRAM Configuration            Press Enter   ▲        Item Help
 ▶ HT Link Control               Press Enter
 ▶ CPU Feature                   Press Enter        Menu Level    ▶
   Memory Current Value          DDR1333
   Timing Mode                   Auto
 x Memory Clock Value or Limit   DDR3 800
   AMD K8 Cool&Quiet Control     Auto
 x CPU-NB Voltage                Auto
   CPU Clock Ratio               Auto
   CPU NB Clock Ratio            Auto
   HT Link Frequency             Auto
   CPU VID Special Add           Auto
   DRAM Voltage Control          1.612 V
   NB HT Voltage                 1.20 V
   NB Core Voltage               1.20 V
   NB PCIE Voltage               1.10 V
   SB PLL 1.2V Voltage           1.20 V
   Side Port Voltage             1.60 V
   O.C Fail Retry Counter        1
   O.C. Fail CMOS Reload         Disabled
   Spread Spectrum               Disabled
   CPU Host/HTT Clock            200MHz
   CPU Host/HTT Adjust Gap       5MHz
   PCIE Clock                    100MHz

   CPU Core Voltage              1.36V
   DRAM Voltage                  1.61V
   HTT +1.2V Voltage             1.21V
   VCC SB Voltage                1.18V         ▼

↑↓→←: Move    Enter: Select    +/-/PU/PD: Value    F10: Save    ESC: Exit    F1: General Help
   F5: Previous Values          F6: Fail-Safe Defaults          F7: Optimized Defaults
```

The screen above list all the fields available in the Genie BIOS Setting submenu, for ease of reference in this manual. In the actual CMOS setup, you have to use the scroll bar to view the fields. The settings on the screen are for reference only. Your version may not be identical to this one.

DRAM Configuration

HT Link Control

CPU Feature

Refer to the following pages for more information on these submenus.

Memory Current Value

This field will show the current value of the system memory.

Timing Mode

Auto
The BIOS will automatically detect all DRAM timing.

MaxMemClk
This option uses the maximum DRAM clock.

Manual
This option allows you to manually select the DRAM's clock speed.

Memory Clock Value or Limit

This is used to select the clock speed of the DIMM.

AMD K8 Cool&Quiet Control

Auto
Enables AMD's Cool'n'Quiet technology. This function allows the system to detect the CPU's tasks and utilization status. When the CPU's task slows down, the system effectively lowers power consumption by changing its CPU speed and voltage, subsequently decreasing its noise level.

Disabled
Disables AMD's Cool'n'Quiet technology.

CPU-NB Voltage

This field allows you to manually adjust to a higher core voltage that is supplied to the Northbridge. If you want to use the Northbridge's default core voltage, leave this field in its default setting.

CPU Clock Ratio

This field is used to select the CPU's frequency ratio.

CPU NB Clock Ratio

This field is used to select the NB's frequency ratio.

HT Link Frequency

The options are Auto, 200MHz, 400MHz, 600MHz, 800MHz and 1 GHz.

CPU VID Special Add

This is used to select the voltage supplied to the CPU.

DRAM Voltage Control

This is used to select the voltage supplied to the DRAM.

NB HT Voltage

This is used to select the Northbridge's HyperTransport voltage.

NB Core Voltage

This is used to select the Northbridge's core voltage.

NB PCIE Voltage

The options are 1.10V to 1.40V.

SB PLL 1.2V Voltage

This field allows you to manually select the Southbridge's core voltage.

Side Port Voltage

This is used to select the SidePort's voltage.

O.C. Fail Retry Counter

The options are 0, 1, 2 and 3.

O.C. Fail CMOS Reload

The options are Disabled, Bank 1, Bank 2, Bank 3 and Bank 4.

Spread Spectrum

Leave this field in its default setting. Do not alter this setting unless advised by an engineer or technician.

CPU Host/HTT Clock

This field is used to enter a CPU Host/HTT Clock value. The minimum is 200 and the maximum is 700.

CPU Host/HTT Adjust Gap

This field is used to enter a CPU Host/HTT adjust gap value.

PCIE Clock

This field is used to enter the PCIE clock. The minimum is 100 and the maximum is 250.

CPU Core Voltage

This field will show the CPU's current voltage.

DRAM Voltage

This field will show the DRAM's current voltage.

HTT +1.2V Voltage

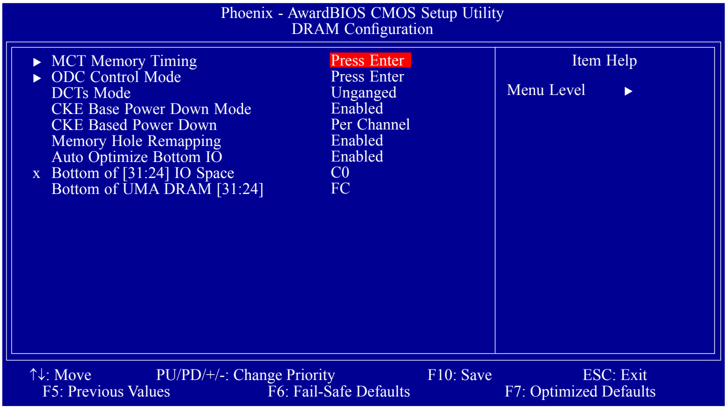
This field will show the HTT's current voltage.

VCC SB Voltage

This field will show the Southbridge's current voltage.

DRAM Configuration

Move the cursor to this field and press <Enter>, the following screen will appear.



```
                 Phoenix - AwardBIOS CMOS Setup Utility
                          DRAM Configuration

 ▶ MCT Memory Timing                Press Enter          Item Help
 ▶ ODC Control Mode                 Press Enter
   DCTs Mode                        Unganged        Menu Level     ▶
   CKE Base Power Down Mode         Enabled
   CKE Based Power Down             Per Channel
   Memory Hole Remapping            Enabled
   Auto Optimize Bottom IO          Enabled
 x Bottom of [31:24] IO Space       C0
   Bottom of UMA DRAM [31:24]       FC

 ↑↓: Move        PU/PD/+/-: Change Priority       F10: Save        ESC: Exit
   F5: Previous Values        F6: Fail-Safe Defaults      F7: Optimized Defaults
```

The settings on the screen are for reference only. Your version may not be identical to this one.

MCT Memory Timing

ODC Control Mode

Refer to the following pages for more information on these submenus.

DCTs Mode

The options are Ganged and Unganged.

CKE Base Power Down Mode

The options are Enabled and Disabled.

CKE Based Power Down

The options are Per Channel and Per CS.

Memory Hole Remapping

The options are Enabled and Disabled.

Auto Optimize Bottom IO

The options are Enabled and Disabled.

Bottom of [31:24] IO Space

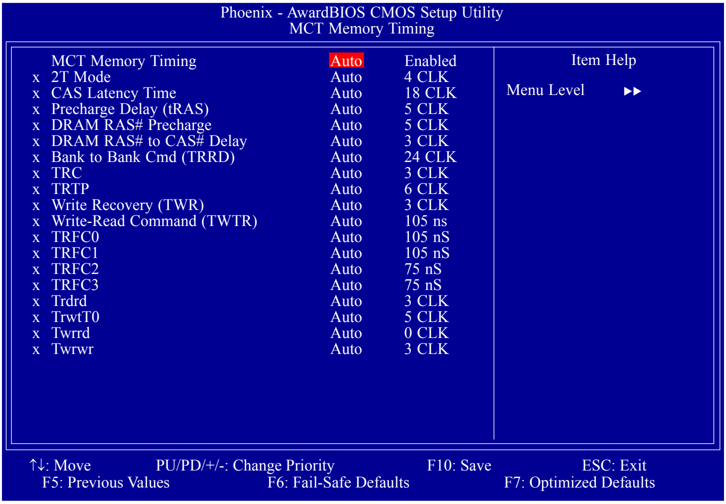
This field is used to enter the memory that will be remapped to another address. The minimum is 0000 and the maximum is 00FF.

Bottom of UMA DRAM [31:24]

This field is used to enter the UMA DRAM value. The minimum is 0000 and the maximum is 00FC.

MCT Memory Timing

Move the cursor to this field and press <Enter>, the following screen will appear.



```
                    Phoenix - AwardBIOS CMOS Setup Utility
                              MCT Memory Timing

     MCT Memory Timing                  Auto    Enabled          Item Help
  x  2T Mode                            Auto    4 CLK
  x  CAS Latency Time                   Auto    18 CLK      Menu Level    ▶▶
  x  Precharge Delay (tRAS)             Auto    5 CLK
  x  DRAM RAS# Precharge                Auto    5 CLK
  x  DRAM RAS# to CAS# Delay            Auto    3 CLK
  x  Bank to Bank Cmd (TRRD)            Auto    24 CLK
  x  TRC                                Auto    3 CLK
  x  TRTP                               Auto    6 CLK
  x  Write Recovery (TWR)               Auto    3 CLK
  x  Write-Read Command (TWTR)          Auto    105 ns
  x  TRFC0                              Auto    105 nS
  x  TRFC1                              Auto    105 nS
  x  TRFC2                              Auto    75 nS
  x  TRFC3                              Auto    75 nS
  x  Trdrd                              Auto    3 CLK
  x  TrwtT0                             Auto    5 CLK
  x  Twrrd                              Auto    0 CLK
  x  Twrwr                              Auto    3 CLK

  ↑↓: Move       PU/PD/+/-: Change Priority        F10: Save          ESC: Exit
    F5: Previous Values          F6: Fail-Safe Defaults        F7: Optimized Defaults
```

The settings on the screen are for reference only. Your version may not be identical to this one.

MCT Memory Timing

Auto
The BIOS will automatically detect all the MCT memory timing.

Manual
This option allows you to manually configure the MCT memory timing on the following fields.

2T Mode

This field is used to configure the 2T mode.

CAS Latency Time

This field is used to select the clock cycles for the CAS latency.

Precharge Delay (tRAS)

The options are Auto, 5 CLK to 18 CLK.

DRAM RAS# Precharge

This field is used to select the idle clocks after issuing a precharge command to the DRAM.

DRAM RAS# to CAS# Delay

This field is used to select the latency between the DRAM active command and the read/write command. The options are 2 and 3.

Bank to Bank Cmd (TRRD)

The options are Auto, 2 CLK to 5 CLK.

TRC

Row-Cycle delay. Set the "System Performance" field to Optimal if you want to use the delay time recommended by the DIMM manufacturer.

TRTP

The options are Auto, 2CLK - 4CLK and 3CLK - 5CLK.

Write Recovery (TWR)

This field is used to select the write recovery time when the DRAM safely registers the last write data. This is the time from the last write data to pre-charge.

Write-Read Command (TWTR)

The options are Auto, 1 CLK, 2 CLK and 3 CLK.

TRFC 0 to TRFC 3

These fields are used to select the auto refresh cycle time.

Trdrd

The options are Auto, 2 CLK, 3 CLK, 4 CLK and 5 CLK.

TrwtT0

The options are Auto, 3 CLK to 9 CLK.

Twrrd

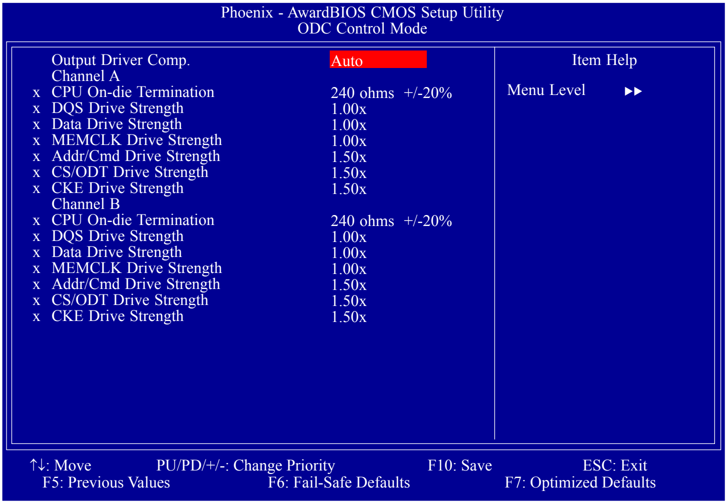
The options are Auto, 0 CLK, 1 CLK, 2 CLK and 3 CLK.

Twrwr

The options are Auto, 1 CLK, 2 CLK and 3 CLK.

ODC Control Mode

Move the cursor to this field and press <Enter>, the following screen will appear.



```
                 Phoenix - AwardBIOS CMOS Setup Utility
                           ODC Control Mode

     Output Driver Comp.               Auto                    Item Help
     Channel A
  x  CPU On-die Termination            240 ohms  +/-20%     Menu Level    ▶▶
  x  DQS Drive Strength                1.00x
  x  Data Drive Strength               1.00x
  x  MEMCLK Drive Strength             1.00x
  x  Addr/Cmd Drive Strength           1.50x
  x  CS/ODT Drive Strength             1.50x
  x  CKE Drive Strength                1.50x
     Channel B
  x  CPU On-die Termination            240 ohms  +/-20%
  x  DQS Drive Strength                1.00x
  x  Data Drive Strength               1.00x
  x  MEMCLK Drive Strength             1.00x
  x  Addr/Cmd Drive Strength           1.50x
  x  CS/ODT Drive Strength             1.50x
  x  CKE Drive Strength                1.50x

  ↑↓: Move        PU/PD/+/-: Change Priority        F10: Save          ESC: Exit
     F5: Previous Values        F6: Fail-Safe Defaults        F7: Optimized Defaults
```

The settings on the screen are for reference only. Your version may not be identical to this one.

Output Driver Comp.

The options are Auto and Manual.

CPU On-die Termination

The options are 300 ohms +/-20%, 150 ohms +/-20% and 75 ohms +/-20%.

DQS Drive Strength

The options are 0.75x, 1.00x, 1.25x and 1.50x.

Data Drive Strength

The options are 0.75x, 1.00x, 1.25x and 1.50x.

MEMCLK Drive Strength

The options are 0.75x, 1.00x, 1.25x and 1.50x.

Addr/Cmd Drive Strength

The options are 1.00x, 1.25x, 1.50x and 2.00x.

CS/ODT Drive Strength

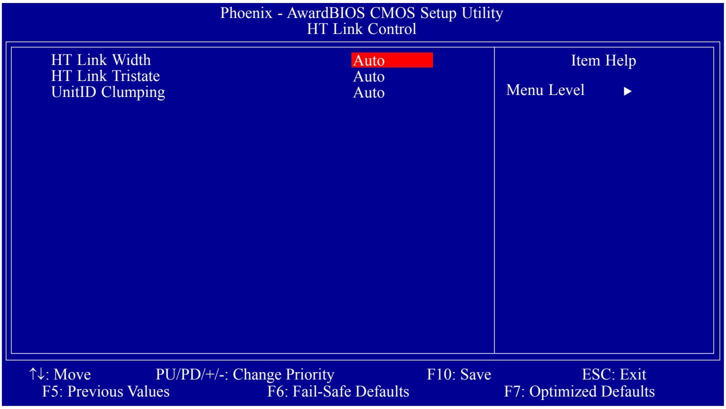
The options are 1.00x, 1.25x, 1.50x and 2.00x.

CKE Drive Strength

The options are 1.00x, 1.25x, 1.50x and 2.00x.

HT Link Control

Move the cursor to this field and press <Enter>, the following screen will appear.



```
              Phoenix - AwardBIOS CMOS Setup Utility
                         HT Link Control

     HT Link Width                    Auto              Item Help
     HT Link Tristate                 Auto
     UnitID Clumping                  Auto         Menu Level    ▶

 ↑↓: Move        PU/PD/+/-: Change Priority       F10: Save         ESC: Exit
   F5: Previous Values          F6: Fail-Safe Defaults      F7: Optimized Defaults
```

The settings on the screen are for reference only. Your version may not be identical to this one.

HT Link Width

The options are Auto, 8 bit and 16 bit.

HT Link Tristate

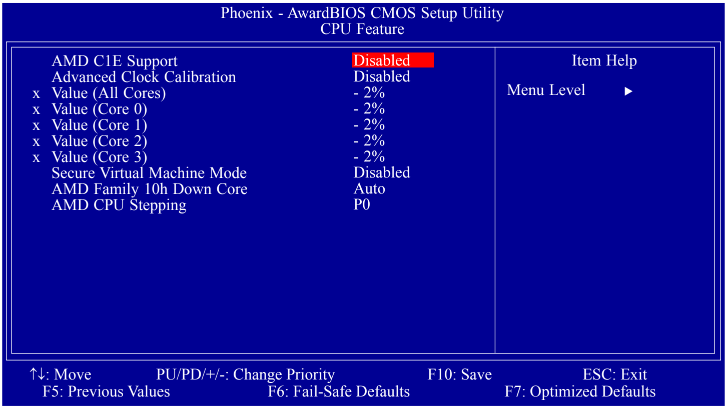
The options are Auto, Disabled, CAD/CTL and CAD/CTL/CLK.

UnitID Clumping

The options are Auto, Disabled, PCIE, GFX and PCIE & GFX.

CPU Feature

Move the cursor to this field and press <Enter>, the following screen will appear.



```
                 Phoenix - AwardBIOS CMOS Setup Utility
                              CPU Feature

     AMD C1E Support                      Disabled         Item Help
     Advanced Clock Calibration           Disabled
  x  Value (All Cores)                    - 2%          Menu Level   ►
  x  Value (Core 0)                       - 2%
  x  Value (Core 1)                       - 2%
  x  Value (Core 2)                       - 2%
  x  Value (Core 3)                       - 2%
     Secure Virtual Machine Mode          Disabled
     AMD Family 10h Down Core             Auto
     AMD CPU Stepping                     P0

 ↑↓: Move     PU/PD/+/-: Change Priority        F10: Save          ESC: Exit
   F5: Previous Values           F6: Fail-Safe Defaults     F7: Optimized Defaults
```

The settings on the screen are for reference only. Your version may not be identical to this one.

AMD C1E Support

The options are Disabled and SoftWare SMI.

Advanced Clock Calibration

This field is used to configure the advanced clock calibration. The options are Disabled, Auto, All Cores and Per Core.

Value (All Cores) to Value (Core 3)

These fields are used to select the core value. The options are 0x to -12x

Secure Virtual Machine Mode

The options are Enabled and Disabled.

AMD Family 10h Down Core

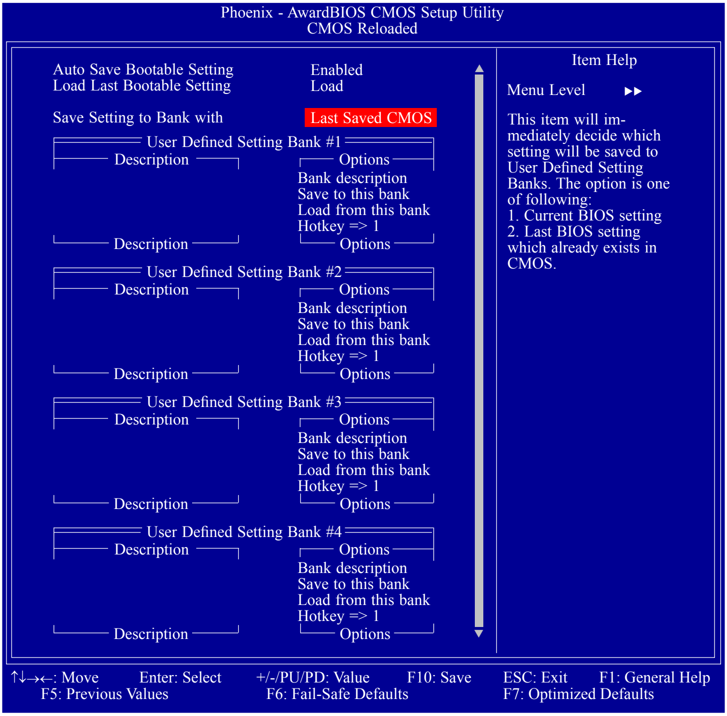
The options are Auto, Single Core, Dual Core, Tri Core and Quad Core.

AMD CPU Stepping

The options are P0, P1, P2 and P3.

CMOS Reloaded

The CMOS Reloaded submenu allows you to save different configurations and when needed, allows you to conveniently restore one of these previously saved configurations. Highlight CMOS Reloaded in the main menu then press <Enter>.



```
               Phoenix - AwardBIOS CMOS Setup Utility
                          CMOS Reloaded

  Auto Save Bootable Setting          Enabled            Item Help
  Load Last Bootable Setting          Load
                                                     Menu Level   ▶▶
  Save Setting to Bank with           Last Saved CMOS
          User Defined Setting Bank #1               This item will im-
      Description                     Options        mediately decide which
                               Bank description      setting will be saved to
                               Save to this bank     User Defined Setting
                               Load from this bank   Banks. The option is one
                               Hotkey => 1           of following:
      Description                     Options        1. Current BIOS setting
          User Defined Setting Bank #2               2. Last BIOS setting
      Description                     Options        which already exists in
                               Bank description      CMOS.
                               Save to this bank
                               Load from this bank
                               Hotkey => 1
      Description                     Options
          User Defined Setting Bank #3
      Description                     Options
                               Bank description
                               Save to this bank
                               Load from this bank
                               Hotkey => 1
      Description                     Options
          User Defined Setting Bank #4
      Description                     Options
                               Bank description
                               Save to this bank
                               Load from this bank
                               Hotkey => 1
      Description                     Options

↑↓→←: Move    Enter: Select    +/-/PU/PD: Value    F10: Save    ESC: Exit    F1: General Help
   F5: Previous Values      F6: Fail-Safe Defaults      F7: Optimized Defaults
```

The screen above list all the fields available in the CMOS Reloaded submenu, for ease of reference in this manual. In the actual CMOS setup, you have to use the scroll bar to view the fields. The settings on the screen are for reference only. Your version may not be identical to this one.

CMOS Reloaded is especially helpful to overclockers who often go through the tiresome trial and error process of repeatedly changing the BIOS settings to come up with the most ideal overclocked setting. By being able to save and load the settings, it eliminates the tedious job of remembering several settings and/or repeatedly resetting settings during the trial process. The settings are stored in the SEEPROM. SEEPROM is divided into 5 banks - the backup bank and the 4 user defined banks.

Auto Save Bootable Setting

This field is used to automatically save the last bootable setting from CMOS to an area in the SEEPROM referred to as the backup bank. To use this function:

1. Set this field to Enabled.
2. Select "Save & Exit Setup" in the main menu then press <Enter>.
3. Type <Y> then press <Enter>.

If the changes to the setting allowed the system to boot, the setting will be stored in the SEEPROM. In other words, if the system did not boot up, the setting will not be stored. You may then follow the steps in the next section to load the last bootable setting.

Load Last Bootable Setting

If, during the trial and error process, the setting resulted to the system's instability or worse yet, not being able to boot up the system, please follow the steps below to use the Load function.

Note:
You can use the Load function only if you have set the "Auto Save Bootable Setting" to Enabled.

1. If the system did not boot up properly but you were able to enter the BIOS utility:
   a. Select "CMOS Reloaded" in the main menu then press <Enter>.
   b. Move the cursor to "Load Last Bootable Setting" then press "Load".
   c. Press <Y> to load the last bootable setting that was stored in the backup bank.
2. If you cannot enter the BIOS utility:
   a. Use the Clear CMOS jumper to clear the CMOS. Refer to chapter 2 for more information about clearing CMOS.
   b. Enter the BIOS utility then perform steps 1a to 1c.

Saving, Loading and Naming BIOS Settings

For overclockers who require different sets of settings for various system environments or operating systems, CMOS Reloaded allows you to save, load and name up to four sets of BIOS settings - in the "User Defined Setting Bank #1" to "User Defined Setting Bank #4" fields.

Save Setting to Bank With

This field is used to select the type of setting you would like saved to a User Defined Setting Bank when you use the "Save to this Bank" function of that bank.

Current BIOS Setting
This option will save the current BIOS setting to the User Defined Setting Bank.

Last BIOS Setting
This option will save the last saved BIOS setting to the User Defined Setting Bank.

User Defined Setting Bank #1/2/3/4

Bank Description
To name the BIOS setting, move the cursor to “Bank Description” then press <Enter>. You can enter up to 60 characters. Providing a name to the BIOS setting will allow you to easily remember the settings in the bank.

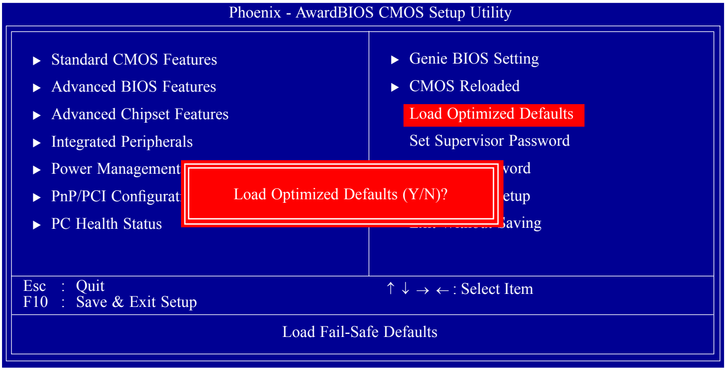
Save to this Bank
To save the BIOS setting, move the cursor to “Save to this Bank” then press <Enter>. Type <Y> then press <Enter>. This will save the current setting or the last saved setting to this bank; depending on the option selected in the “Save Setting to Bank With” field. If you want to immediately reboot to use the new settings, make sure to save before you exit the BIOS setup utility by selecting “Y” in the “Save & Exit Setup” submenu.

Load from this Bank
To load the setting saved in the bank, move the cursor to “Load from this Bank” then press <Enter>. The setting in this bank will replace the current setting. Make sure to save before you exit the BIOS setup utility by selecting “Y” in the “Save & Exit Setup” submenu.

Hotkey
You can now load a BIOS setting during system boot up; bypassing the lengthy process of entering the BIOS utility to load a setting. Move the cursor to “Hotkey” then press <Enter>. Select the key you would like to use to load the settings from the bank. When the system boots up, press the key to load the setting.

Load Optimized Defaults

The “Load Optimized Defaults” option loads optimized settings from the BIOS ROM. Use the default values as standard values for your system. Highlight this option in the main menu and press <Enter>.



Phoenix - AwardBIOS CMOS Setup Utility

- ▶ Standard CMOS Features
- ▶ Advanced BIOS Features
- ▶ Advanced Chipset Features
- ▶ Integrated Peripherals
- ▶ Power Management
- ▶ PnP/PCI Configurat
- ▶ PC Health Status

- ▶ Genie BIOS Setting
- ▶ CMOS Reloaded
- Load Optimized Defaults
- Set Supervisor Password
- vord
- etup
- aving

Load Optimized Defaults (Y/N)?

Esc : Quit
F10 : Save & Exit Setup
↑ ↓ → ← : Select Item

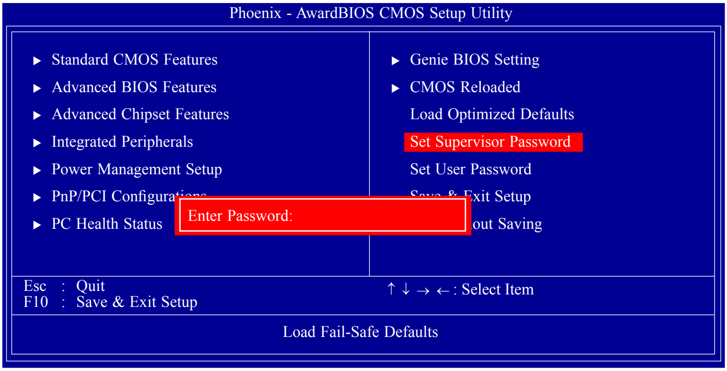
Load Fail-Safe Defaults

Type <Y> and press <Enter> to load the Setup default values.

Set Supervisor Password

If you want to protect your system and setup from unauthorized entry, set a supervisor’s password with the “System” option selected in the Advanced BIOS Features. If you want to protect access to setup only, but not your system, set a supervisor’s password with the “Setup” option selected in the Advanced BIOS Features. You will not be prompted for a password when you cold boot the system.

Use the arrow keys to highlight “Set Supervisor Password” and press <Enter>.



```
                    Phoenix - AwardBIOS CMOS Setup Utility

 ▶ Standard CMOS Features              ▶ Genie BIOS Setting
 ▶ Advanced BIOS Features              ▶ CMOS Reloaded
 ▶ Advanced Chipset Features             Load Optimized Defaults
 ▶ Integrated Peripherals                Set Supervisor Password
 ▶ Power Management Setup                Set User Password
 ▶ PnP/PCI Configura                     Save & Exit Setup
 ▶ PC Health Status   Enter Password:    out Saving

 Esc  :  Quit                          ↑ ↓ → ← : Select Item
 F10  :  Save & Exit Setup

                          Load Fail-Safe Defaults
```

Type in the password. You are limited to eight characters. When done, the message below will appear:

Confirm Password:

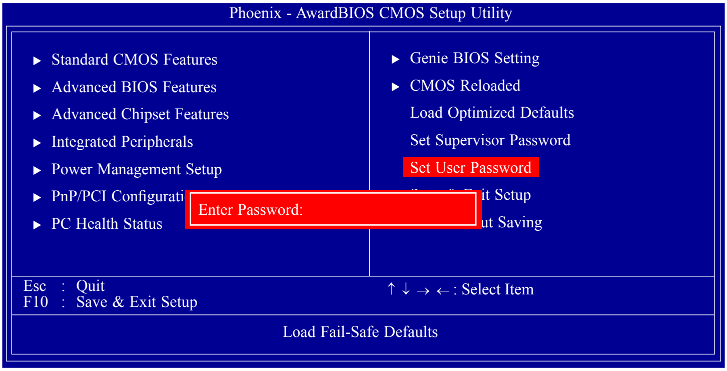
You are asked to verify the password. Type in exactly the same password. If you type in a wrong password, you will be prompted to enter the correct password again. To delete or disable the password function, highlight “Set Supervisor Password” and press <Enter>, instead of typing in a new password. Press the <Esc> key to return to the main menu.

Set User Password

If you want another user to have access only to your system but not to setup, set a user’s password with the “System” option selected in the Advanced BIOS Features. If you want a user to enter a password when trying to access setup, set a user’s password with the “Setup” option selected in the Advanced BIOS Features.

Using user’s password to enter Setup allows a user to access only “Set User Password” that appears in the main menu screen. Access to all other options is denied.

Use the arrow keys to highlight “Set User Password” and press <Enter>.


Phoenix - AwardBIOS CMOS Setup Utility
▶ Standard CMOS Features
▶ Advanced BIOS Features
▶ Advanced Chipset Features
▶ Integrated Peripherals
▶ Power Management Setup
▶ PnP/PCI Configurati
▶ PC Health Status
▶ Genie BIOS Setting
▶ CMOS Reloaded
Load Optimized Defaults
Set Supervisor Password
Set User Password
it Setup
ut Saving
Esc : Quit
F10 : Save & Exit Setup
↑ ↓ → ← : Select Item
Load Fail-Safe Defaults

Enter Password:

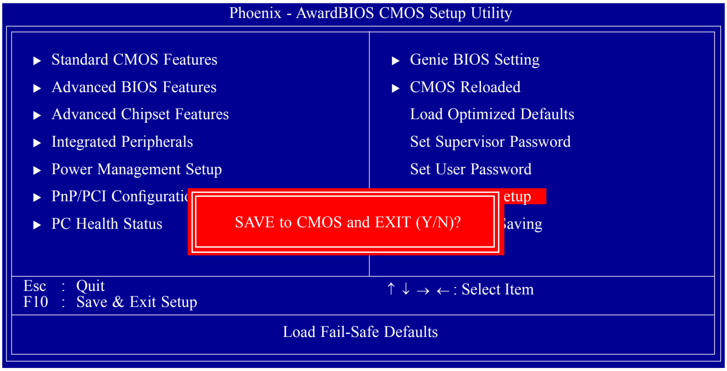
Type in the password. You are limited to eight characters. When done, the message below will appear:

Confirm Password:

You are asked to verify the password. Type in exactly the same password. If you type in a wrong password, you will be prompted to enter the correct password again. To delete or disable the password function, highlight “Set User Password” and press <Enter>, instead of typing in a new password. Press the <Esc> key to return to the main menu.

Save & Exit Setup

When all the changes have been made, highlight “Save & Exit Setup” and press <Enter>.



Phoenix - AwardBIOS CMOS Setup Utility

- ▶ Standard CMOS Features
- ▶ Advanced BIOS Features
- ▶ Advanced Chipset Features
- ▶ Integrated Peripherals
- ▶ Power Management Setup
- ▶ PnP/PCI Configuratio
- ▶ PC Health Status

- ▶ Genie BIOS Setting
- ▶ CMOS Reloaded
- Load Optimized Defaults
- Set Supervisor Password
- Set User Password
- etup
- aving

SAVE to CMOS and EXIT (Y/N)?

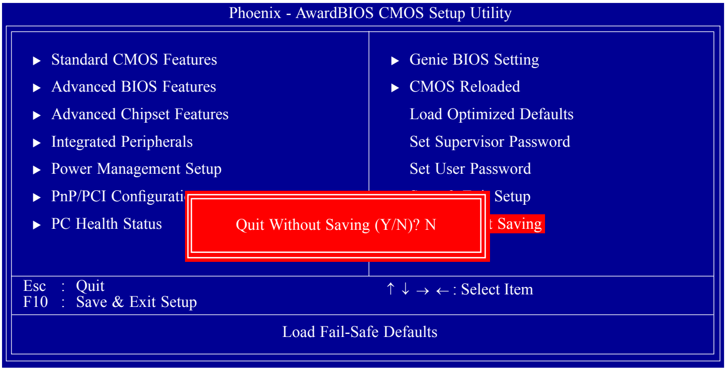
Esc : Quit
F10 : Save & Exit Setup
↑ ↓ → ← : Select Item

Load Fail-Safe Defaults

Type “Y” and press <Enter>. The modifications you have made will be written into the CMOS memory, and the system will reboot. You will once again see the initial diagnostics on the screen. If you wish to make additional changes to the setup, press <Ctrl> <Alt> <Esc> simultaneously or <Del> after memory testing is done.

Exit Without Saving

When you do not want to save the changes you have made, highlight "Exit Without Saving" and press <Enter>.



Phoenix - AwardBIOS CMOS Setup Utility

- ▶ Standard CMOS Features
- ▶ Advanced BIOS Features
- ▶ Advanced Chipset Features
- ▶ Integrated Peripherals
- ▶ Power Management Setup
- ▶ PnP/PCI Configurati
- ▶ PC Health Status

- ▶ Genie BIOS Setting
- ▶ CMOS Reloaded
- Load Optimized Defaults
- Set Supervisor Password
- Set User Password
- Setup
- t Saving

Quit Without Saving (Y/N)? N

Esc : Quit
F10 : Save & Exit Setup

↑ ↓ → ← : Select Item

Load Fail-Safe Defaults

Type "Y" and press <Enter>. The system will reboot and you will once again see the initial diagnostics on the screen. If you wish to make any changes to the setup, press <Ctrl> <Alt> <Esc> simultaneously or <Del> after memory testing is done.

RAID BIOS

The AMD BIOS utility is used to configure and manage RAID on Serial ATA drives.

After you power up the system and all drives have been detected, the AMD BIOS status message screen will appear. Press the <F4> key to enter the utility. The utility allows you to build a RAID system on Serial ATA drives.

Important:
Before creating RAID, make sure you have installed the Serial ATA drives and connected the data cables otherwise you won't be able to enter the RAID BIOS utility.

Refer to chapter 5 for steps in configuring RAID.

Updating the BIOS

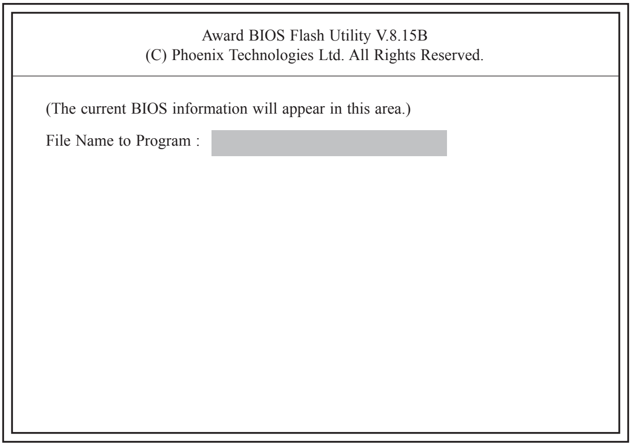
To update the BIOS, you will need the new BIOS file and a flash utility, AWDFLASH.EXE. You can download them from DFI's web site or contact technical support or your sales representative.

1. Save the new BIOS file along with the flash utility AWDFLASH.EXE to a floppy disk.

2. Reboot the system and enter the Award BIOS Setup Utility to set the first boot drive to "Floppy".

3. Save the setting and reboot the system.

4. After the system booted from the floppy disk, execute the flash utility by typing AWDFLASH.EXE. The following screen will appear.



```
Award BIOS Flash Utility V.8.15B
(C) Phoenix Technologies Ltd. All Rights Reserved.

(The current BIOS information will appear in this area.)
File Name to Program :
```

5. Type the new BIOS file name onto the gray area that is next to "File Name to Program" then press <Enter>.

6. The following will appear.

   Do You Want to Save BIOS (Y/N)

   This question refers to the current existing BIOS in your system. We recommend that you save the current BIOS and its flash utility; just in case you need to reinstall the BIOS. To save the current BIOS, press <Y> then enter the file name of the current BIOS. Otherwise, press <N>.

7. The following will then appear.

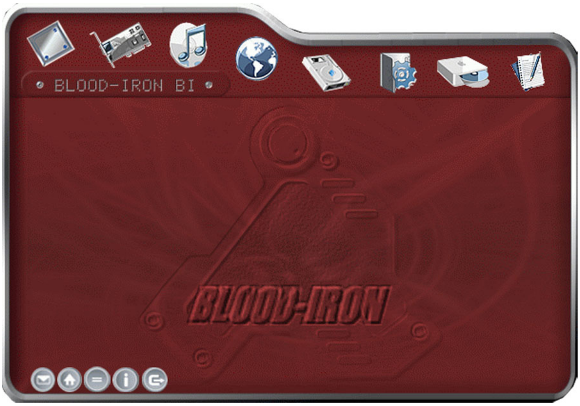
   Press "Y" to Program or "N" to Exit

8. Press <Y> to flash the new BIOS.

Chapter 4 - Supported Software

The DVD that came with the system board contains drivers, utilities and software applications required to enhance the performance of the system board.

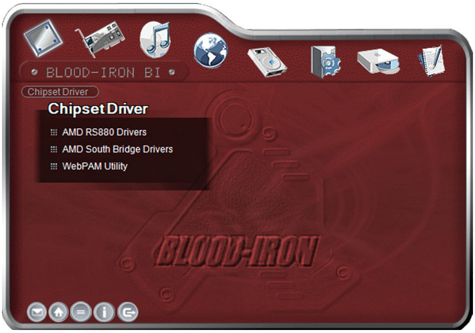
Insert the DVD into an optical drive. The screen shown below will appear. If after inserting the DVD, "Autorun" did not automatically start, please go directly to the root directory of the DVD and double-click "Setup".



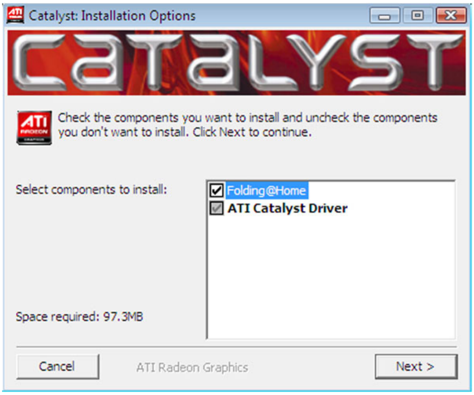
AMD RS880 Drivers

On the top row of the screen, click the 1st icon to open the Chipset Driver menu.

1. Click "AMD RS880 Drivers".


BLOOD-IRON BI
Chipset Driver
Chipset Driver
AMD RS880 Drivers
AMD South Bridge Drivers
WebPAM Utility
BLOOD-IRON

2. Select the components you want to install then click Next.


Catalyst: Installation Options
CATALYST
ATI RADEON
Cancel
ATI Radeon Graphics
Next >

Check the components you want to install and uncheck the components you don't want to install. Click Next to continue.

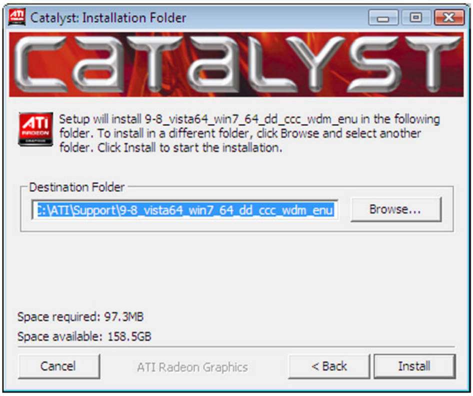
Select components to install:

☑ Folding@Home

☑ **ATI Catalyst Driver**

Space required: 97.3MB

3. Click Install to install to the destination folder or click Browse to select another folder.


Catalyst: Installation Folder
CATALYST
ATI RADEON
Browse...
Cancel
ATI Radeon Graphics
< Back
Install

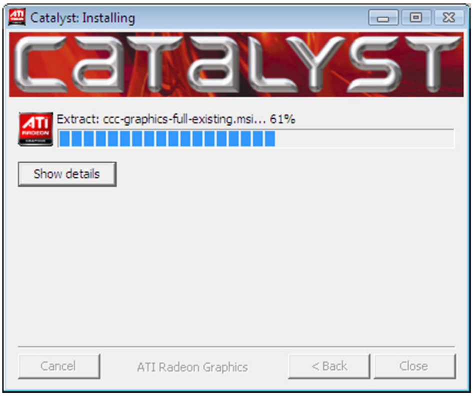
Setup will install 9-8_vista64_win7_64_dd_ccc_wdm_enu in the following folder. To install in a different folder, click Browse and select another folder. Click Install to start the installation.

Destination Folder: C:\ATI\Support\9-8_vista64_win7_64_dd_ccc_wdm_enu

Space required: 97.3MB

Space available: 158.5GB

4. The installation program is extracting the files needed to install the driver.

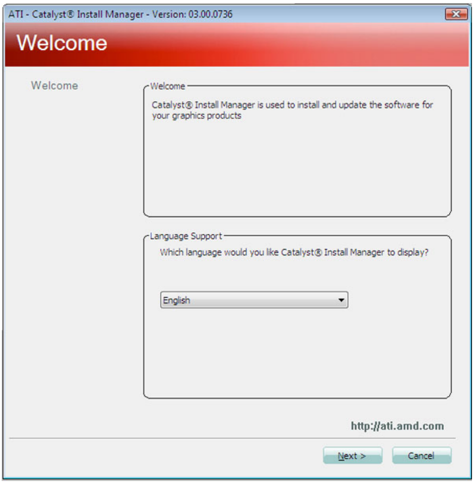


Catalyst: Installing

Extract: ccc-graphics-full-existing.msi... 61%

CATALYST
ATI
Show details
Cancel
ATI Radeon Graphics
< Back
Close

5. Select the language for this installation then click Next.



ATI - Catalyst® Install Manager - Version: 03.00.0736

Welcome

Catalyst® Install Manager is used to install and update the software for your graphics products

Language Support

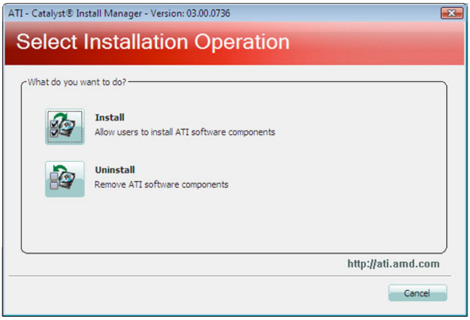
Which language would you like Catalyst® Install Manager to display?

English

http://ati.amd.com

Welcome
Welcome
Next >
Cancel

6. The installation program is now ready to install the driver. Click Install.



ATI - Catalyst® Install Manager - Version: 03.00.0736

Select Installation Operation

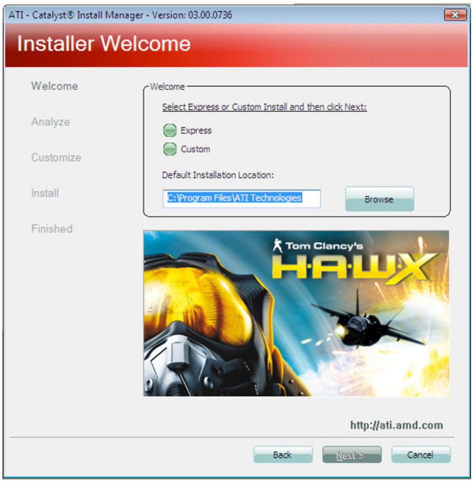
What do you want to do?

Install
Allow users to install ATI software components

Uninstall
Remove ATI software components

http://ati.amd.com

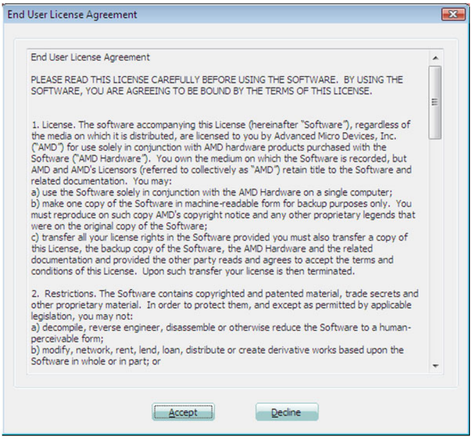
7. Select the component (Express or Custom) you want to install then click Next.


ATI - Catalyst® Install Manager - Version: 03.00.0736
Installer Welcome
Welcome
Analyze
Customize
Install
Finished
Welcome
Express
Custom
Browse
Tom Clancy's
HAWX
http://ati.amd.com
Back
Next >
Cancel

Select Express or Custom Install and then click Next:

Default Installation Location: C:\Program Files\ATI Technologies

8. Read the license agreement then click Accept.


End User License Agreement
Accept
Decline

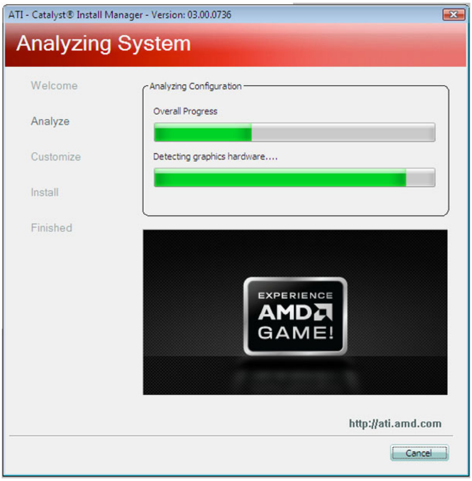
End User License Agreement

PLEASE READ THIS LICENSE CAREFULLY BEFORE USING THE SOFTWARE. BY USING THE SOFTWARE, YOU ARE AGREEING TO BE BOUND BY THE TERMS OF THIS LICENSE.

1. License. The software accompanying this License (hereinafter "Software"), regardless of the media on which it is distributed, are licensed to you by Advanced Micro Devices, Inc. ("AMD") for use solely in conjunction with AMD hardware products purchased with the Software ("AMD Hardware"). You own the medium on which the Software is recorded, but AMD and AMD's Licensors (referred to collectively as "AMD") retain title to the Software and related documentation. You may:
a) use the Software solely in conjunction with the AMD Hardware on a single computer;
b) make one copy of the Software in machine-readable form for backup purposes only. You must reproduce on such copy AMD's copyright notice and any other proprietary legends that were on the original copy of the Software;
c) transfer all your license rights in the Software provided you must also transfer a copy of this License, the backup copy of the Software, the AMD Hardware and the related documentation and provided the other party reads and agrees to accept the terms and conditions of this License. Upon such transfer your license is then terminated.

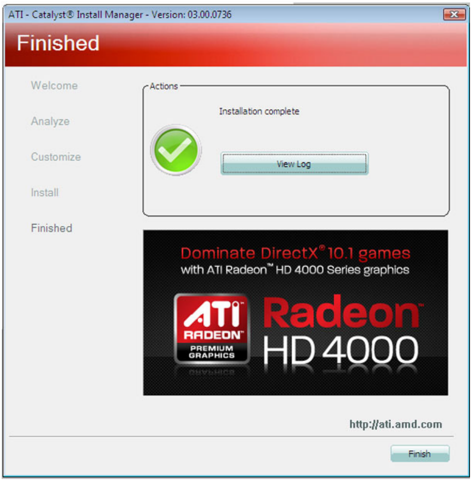
2. Restrictions. The Software contains copyrighted and patented material, trade secrets and other proprietary material. In order to protect them, and except as permitted by applicable legislation, you may not:
a) decompile, reverse engineer, disassemble or otherwise reduce the Software to a human-perceivable form;
b) modify, network, rent, lend, loan, distribute or create derivative works based upon the Software in whole or in part; or

9. The Catalyst Install Manager is now installing the driver.


ATI - Catalyst® Install Manager - Version: 03.00.0736
Analyzing System
Welcome
Analyze
Customize
Install
Finished
Analyzing Configuration
Overall Progress
EXPERIENCE AMD GAME!
http://ati.amd.com
Cancel

Detecting graphics hardware....

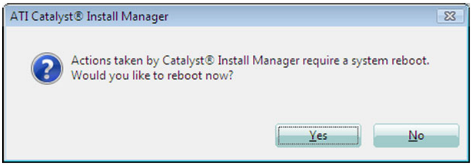
10. The driver has been completely installed. Click Finish.


ATI - Catalyst® Install Manager - Version: 03.00.0736
Finished
Welcome
Analyze
Customize
Install
Finished
Actions
View Log
Dominate DirectX® 10.1 games
with ATI Radeon™ HD 4000 Series graphics
ATI RADEON PREMIUM GRAPHICS
Radeon HD 4000
http://ati.amd.com
Finish

Installation complete

11. Click Yes to reboot the system.

Restarting the system will allow the new driver installation to take effect.

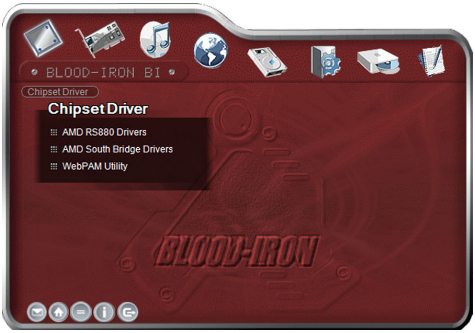

ATI Catalyst® Install Manager
Yes
No

Actions taken by Catalyst® Install Manager require a system reboot.
Would you like to reboot now?

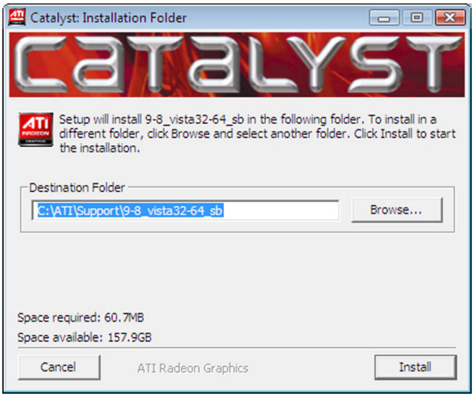
AMD South Bridge Drivers

On the top row of the screen, click the 1st icon to open the Chipset Driver menu.

1. Click "AMD South Bridge Drivers".


BLOOD-IRON BI
Chipset Driver
Chipset Driver
AMD RS880 Drivers
AMD South Bridge Drivers
WebPAM Utility
BLOOD-IRON

2. Click Install to install to the destination folder or click Browse to select another folder.


Catalyst: Installation Folder
CATALYST

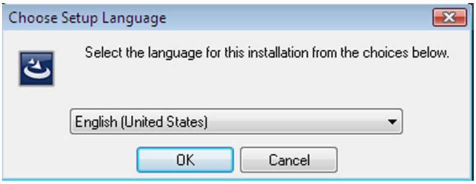
Setup will install 9-8_vista32-64_sb in the following folder. To install in a different folder, click Browse and select another folder. Click Install to start the installation.

Destination Folder: C:\ATI\Support\9-8_vista32-64_sb

Space required: 60.7MB
Space available: 157.9GB

Browse...
Cancel
ATI Radeon Graphics
Install

3. Select the language for this installation then click OK.

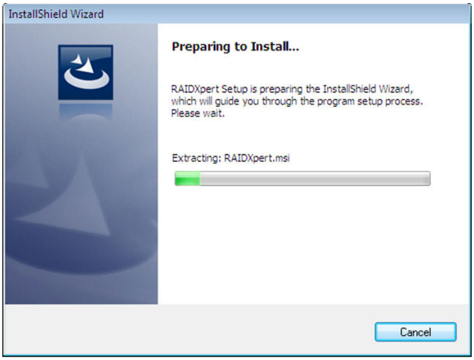

Choose Setup Language

Select the language for this installation from the choices below.

English (United States)

OK
Cancel

4. The installation program is extracting the files needed to install the driver.

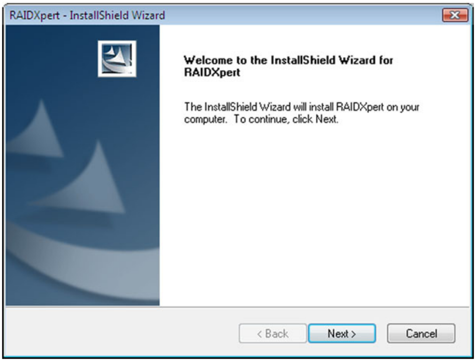


Preparing to Install...

RAIDXpert Setup is preparing the InstallShield Wizard, which will guide you through the program setup process. Please wait.

Extracting: RAIDXpert.msi

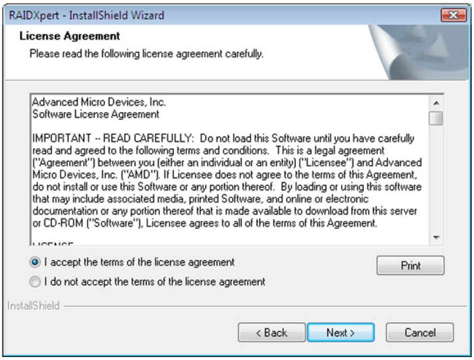
5. The installation program is now ready to install the driver. Click Next.



Welcome to the InstallShield Wizard for RAIDXpert

The InstallShield Wizard will install RAIDXpert on your computer. To continue, click Next.

6. Read the license agreement then click "I accept the terms in the license agreement". Click Next.



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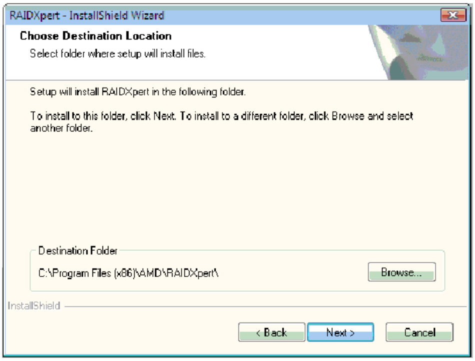
○ I do not accept the terms of the license agreement

7. Click Next to install to the destination folder or click Browse to select another folder.


RAIDXpert - InstallShield Wizard
Browse...
InstallShield
< Back
Next >
Cancel

Choose Destination Location

Select folder where setup will install files.

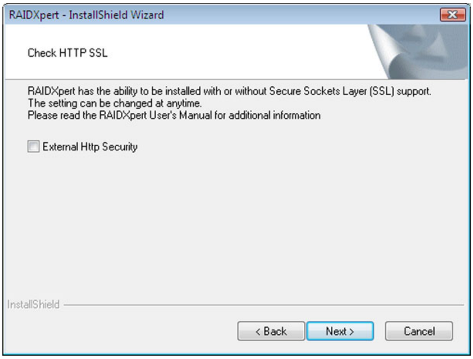
Setup will install RAIDXpert in the following folder.

To install to this folder, click Next. To install to a different folder, click Browse and select another folder.

Destination Folder

C:\Program Files (x86)\AMD\RAIDXpert\

8. Click Next.

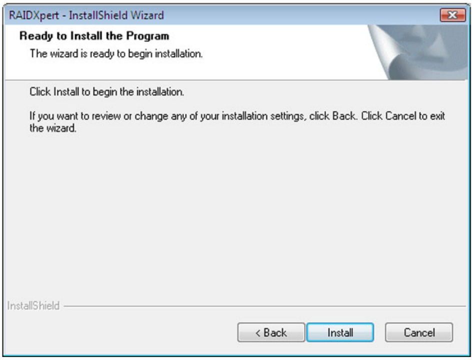

RAIDXpert - InstallShield Wizard
InstallShield
< Back
Next >
Cancel

Check HTTP SSL

RAIDXpert has the ability to be installed with or without Secure Sockets Layer (SSL) support.
The setting can be changed at anytime.
Please read the RAIDXpert User's Manual for additional information

☐ External Http Security

9. Click Install to begin the installation.


RAIDXpert - InstallShield Wizard
InstallShield
< Back
Install
Cancel

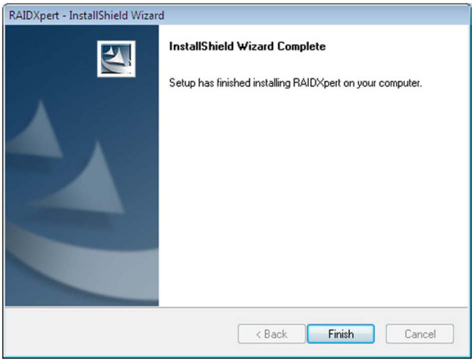
Ready to Install the Program

The wizard is ready to begin installation.

Click Install to begin the installation.

If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.

10. The driver has been completely installed. Click Finish.


RAIDXpert - InstallShield Wizard

InstallShield Wizard Complete

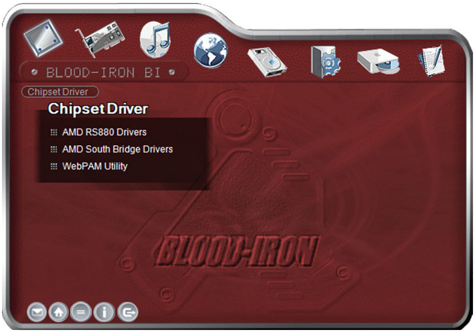
Setup has finished installing RAIDXpert on your computer.

< Back
Finish
Cancel

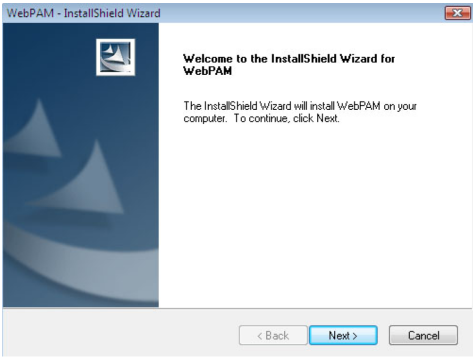
WebPAM Utility

On the top row of the screen, click the 1st icon to open the Chipset Driver menu.

1. Click “WebPAM Utility”.


BLOOD-IRON BI
Chipset Driver
Chipset Driver
AMD RS880 Drivers
AMD South Bridge Drivers
WebPAM Utility
BLOOD-IRON

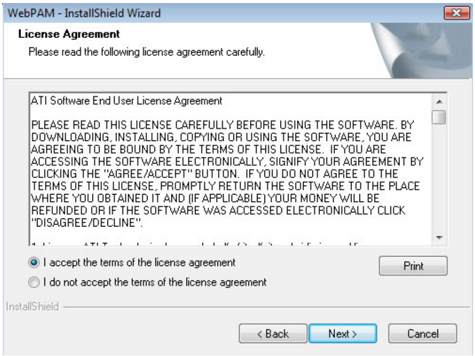
2. The installation program is now ready to install the utility. Click Next.


WebPAM - InstallShield Wizard
< Back
Next >
Cancel

Welcome to the InstallShield Wizard for WebPAM

The InstallShield Wizard will install WebPAM on your computer. To continue, click Next.

3. Read the license agreement then click “I accept the terms of the license agreement”. Click Next.


WebPAM - InstallShield Wizard
Print
InstallShield
< Back
Next >
Cancel

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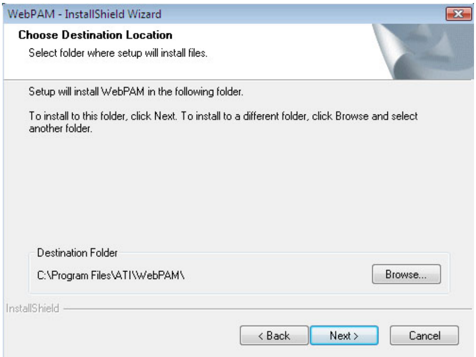
● I accept the terms of the license agreement

○ I do not accept the terms of the license agreement

4. Click Next to install to the destination folder or click Browse to select another folder.


WebPAM - InstallShield Wizard

Choose Destination Location

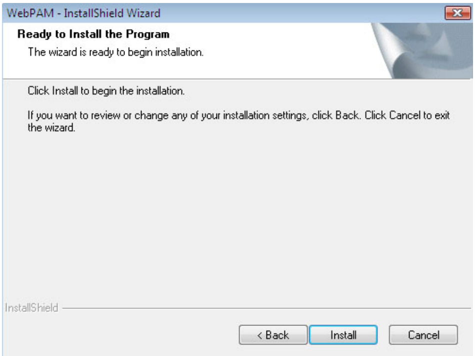
Select folder where setup will install files.

Setup will install WebPAM in the following folder.

To install to this folder, click Next. To install to a different folder, click Browse and select another folder.

Destination Folder
C:\Program Files\ATI\WebPAM\

5. Click Install to begin the installation.


WebPAM - InstallShield Wizard

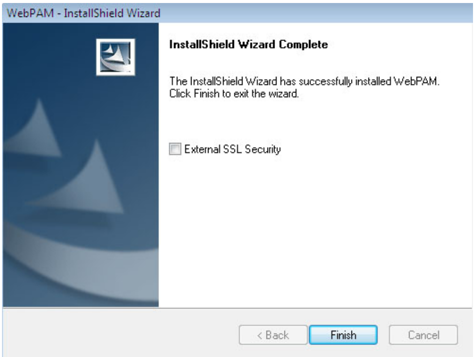
Ready to Install the Program

The wizard is ready to begin installation.

Click Install to begin the installation.

If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.

6. The utility has been completely installed. Click Finish.

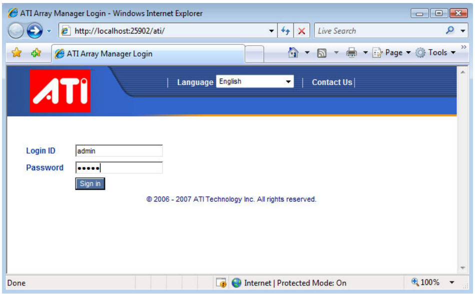

WebPAM - InstallShield Wizard

InstallShield Wizard Complete

The InstallShield Wizard has successfully installed WebPAM. Click Finish to exit the wizard.

☐ External SSL Security

7. The first time you run the WebPam utility, the default Login ID and password is admin. You can later change the ID and password after you have entered the utility.



ATI Array Manager Login - Windows Internet Explorer

http://localhost:25902/ati/

Language: English

Login ID: admin

Password: •••••

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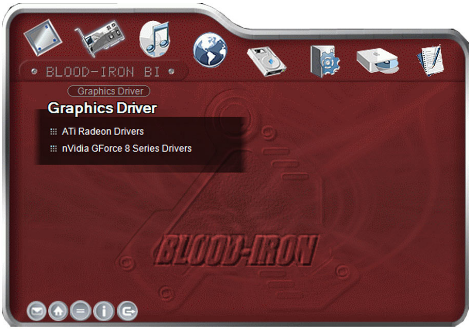
Done | Internet | Protected Mode: On | 100%

Live Search
ATI Array Manager Login
Page
Tools
ATI
Contact Us
Sign in

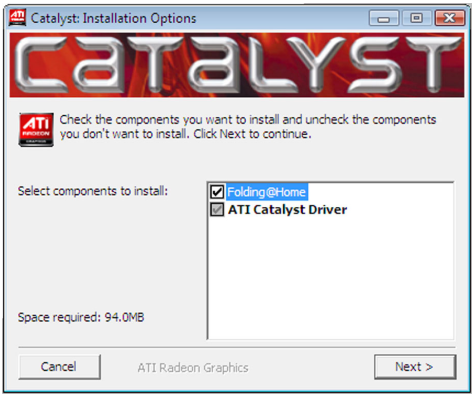
ATi Radeon Drivers

On the top row of the screen, click the 2nd icon to open the Graphics Driver menu.

1. Click “ATi Radeon Drivers”.


BLOOD-IRON BI
Graphics Driver
Graphics Driver
ATi Radeon Drivers
nVidia GForce 8 Series Drivers
BLOOD-IRON

2. Select the components you want to install then click Next.


Catalyst: Installation Options
CATALYST
ATI RADEON GRAPHICS
Cancel
ATI Radeon Graphics
Next >

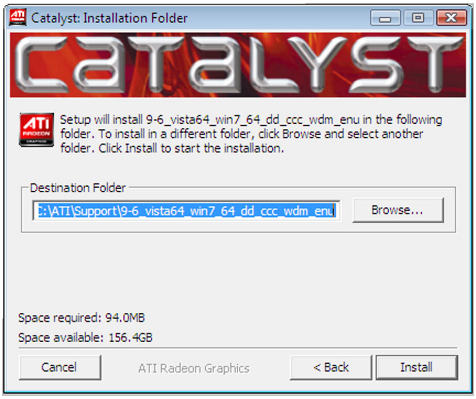
Check the components you want to install and uncheck the components you don't want to install. Click Next to continue.

Select components to install:

☑ Folding@Home
☑ ATI Catalyst Driver

Space required: 94.0MB

3. Click Install to install to the destination folder or click Browse to select another folder.


Catalyst: Installation Folder
CATALYST
ATI RADEON GRAPHICS
Browse...
Cancel
ATI Radeon Graphics
< Back
Install

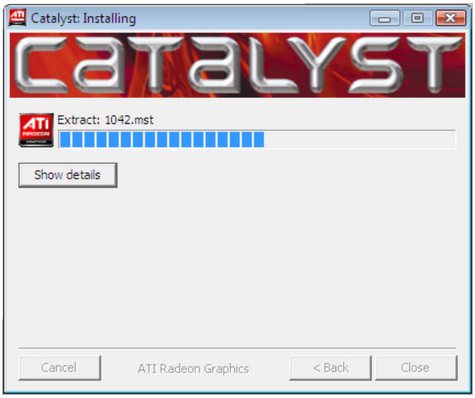
Setup will install 9-6_vista64_win7_64_dd_ccc_wdm_enu in the following folder. To install in a different folder, click Browse and select another folder. Click Install to start the installation.

Destination Folder: C:\ATI\Support\9-6_vista64_win7_64_dd_ccc_wdm_enu

Space required: 94.0MB

Space available: 156.4GB

4. The installation program is extracting the files needed to install the driver.

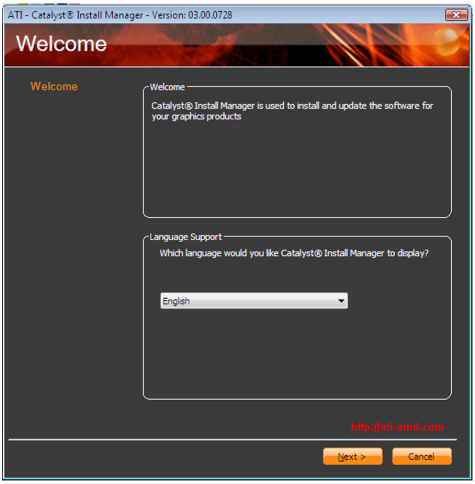


Catalyst: Installing

Extract: 1042.mst

CATALYST
ATI RADEON
Show details
Cancel
ATI Radeon Graphics
< Back
Close

5. Select the language for this installation then click Next.



ATI - Catalyst® Install Manager - Version: 03.00.0728

Welcome

Welcome

Welcome

Catalyst® Install Manager is used to install and update the software for your graphics products

Language Support

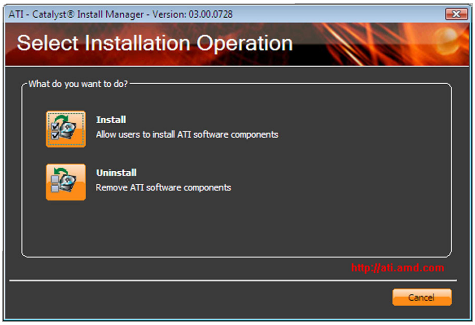
Which language would you like Catalyst® Install Manager to display?

English

http://ati.amd.com

Next >
Cancel

6. The installation program is now ready to install the driver. Click Install.



ATI - Catalyst® Install Manager - Version: 03.00.0728

Select Installation Operation

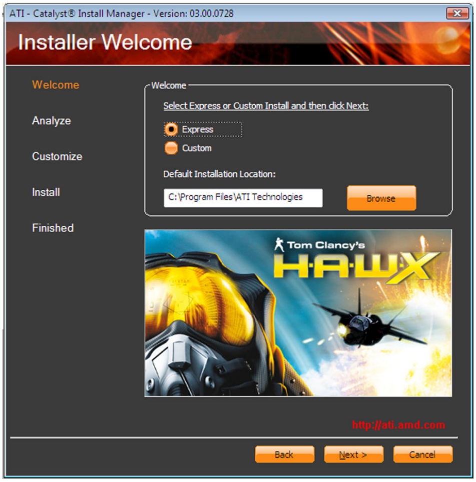
What do you want to do?

Install
Allow users to install ATI software components

Uninstall
Remove ATI software components

http://ati.amd.com

7. Select the component (Express or Custom) you want to install then click Next.


ATI - Catalyst® Install Manager - Version: 03.00.0728
Installer Welcome
Welcome
Analyze
Customize
Install
Finished
Welcome
Browse
Tom Clancy's
HAWX
http://ati.amd.com
Back
Next >
Cancel

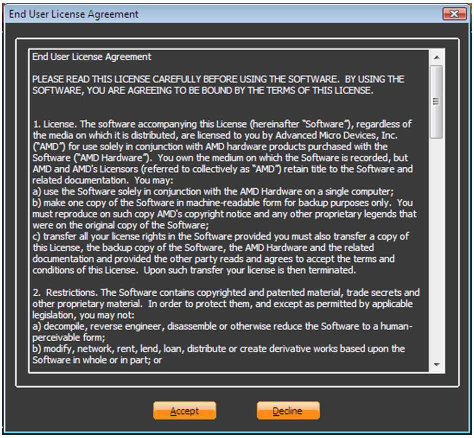
Select Express or Custom Install and then click Next:

● Express

○ Custom

Default Installation Location: C:\Program Files\ATI Technologies

8. Read the license agreement then click Accept.


End User License Agreement
Accept
Decline

End User License Agreement

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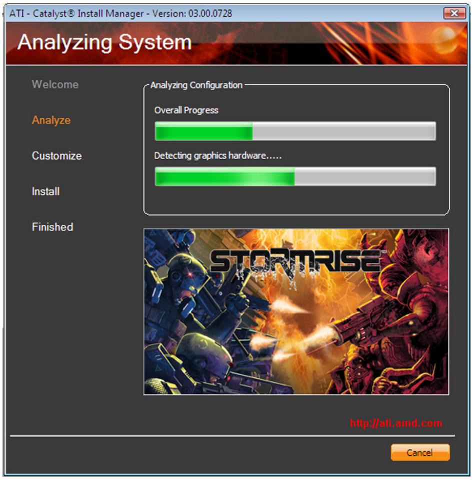
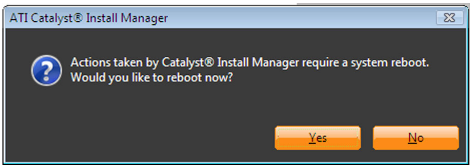
9. The Catalyst Install Manager is now installing the driver.


ATI - Catalyst® Install Manager - Version: 03.00.0728
Analyzing System
Welcome
Analyze
Customize
Install
Finished
Analyzing Configuration
Overall Progress
Detecting graphics hardware.....
STORMRISE
http://ati.amd.com
Cancel

11. Click Yes to reboot the system.

Rebooting the system will allow the new driver installation to take effect.


ATI Catalyst® Install Manager

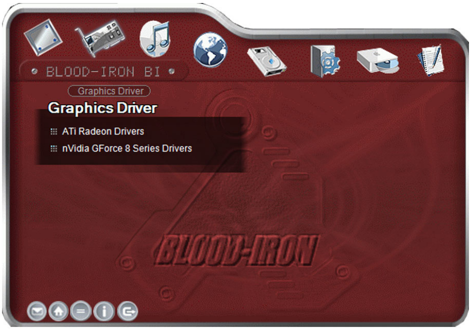
Actions taken by Catalyst® Install Manager require a system reboot.
Would you like to reboot now?

Yes
No

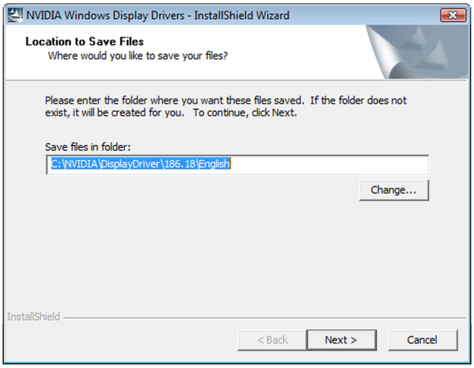
nVidia GForce 8 Series Drivers

On the top row of the screen, click the 2nd icon to open the Graphics Driver menu.

1. Click "nVidia GForce 8 Series Drivers".


BLOOD-IRON BI
Graphics Driver
Graphics Driver
ATi Radeon Drivers
nVidia GForce 8 Series Drivers
BLOOD-IRON

2. Click Next to install to the destination folder or click Change to select another folder.



NVIDIA Windows Display Drivers - InstallShield Wizard

Location to Save Files

Where would you like to save your files?

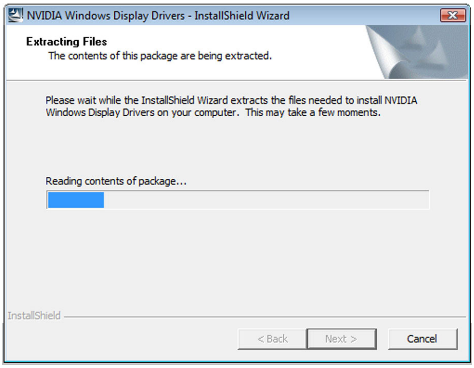
Please enter the folder where you want these files saved. If the folder does not exist, it will be created for you. To continue, click Next.

Save files in folder:

C:\NVIDIA\DisplayDriver\186.18\English

Change...
InstallShield
< Back
Next >
Cancel

3. The installation program is extracting the files needed to install the driver.



NVIDIA Windows Display Drivers - InstallShield Wizard

Extracting Files

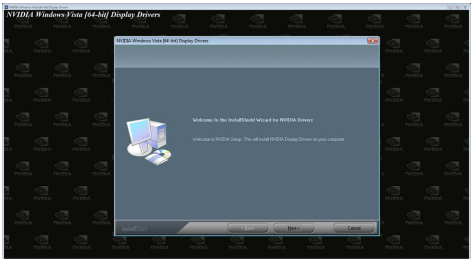
The contents of this package are being extracted.

Please wait while the InstallShield Wizard extracts the files needed to install NVIDIA Windows Display Drivers on your computer. This may take a few moments.

Reading contents of package...

InstallShield
< Back
Next >
Cancel

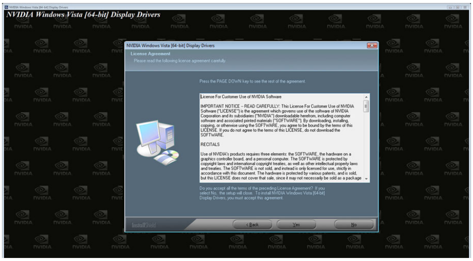
4. Click Next to begin the installation.


NVIDIA Windows Vista [64-bit] Display Drivers
NVIDIA Windows Vista [64-bit] Display Drivers
InstallShield
< Back
Next >
Cancel

Welcome to the InstallShield Wizard for NVIDIA Drivers

Welcome to NVIDIA Setup. This will install NVIDIA Display Drivers on your computer.

5. Read the license agreement then click Yes.


NVIDIA Windows Vista [64-bit] Display Drivers
NVIDIA Windows Vista [64-bit] Display Drivers
InstallShield
< Back
Yes
No

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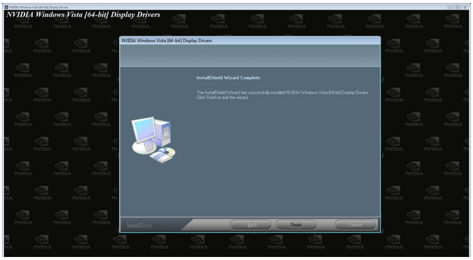
Do you accept all the terms of the preceding License Agreement? If you select No, the setup will close. To install NVIDIA Windows Vista [64-bit] Display Drivers, you must accept this agreement.

6. Click Finish.


NVIDIA Windows Vista [64-bit] Display Drivers
NVIDIA Windows Vista [64-bit] Display Drivers
InstallShield
< Back
Finish
Cancel

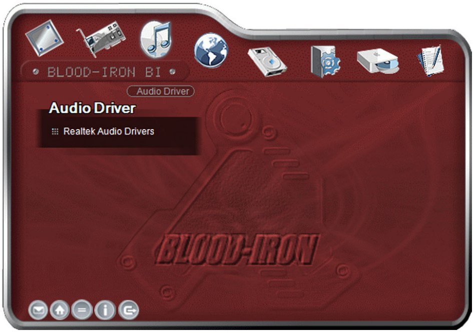
InstallShield Wizard Complete

The InstallShield Wizard has successfully installed NVIDIA Windows Vista [64-bit] Display Drivers. Click Finish to exit the wizard.

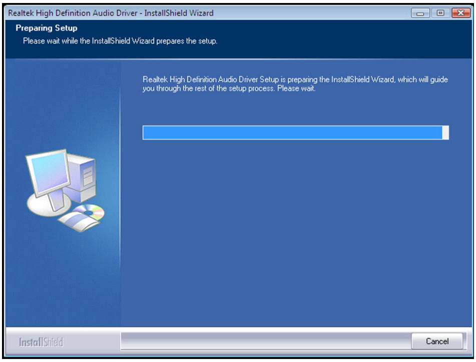
Realtek Audio Drivers

On the top row of the screen, click the 3rd icon to open the Audio Driver menu.

1. Click "Realtek Audio Drivers".


BLOOD-IRON BI
Audio Driver
Audio Driver
Realtek Audio Drivers
BLOOD-IRON

2. Setup is preparing the installation program which will guide you through the installation process.

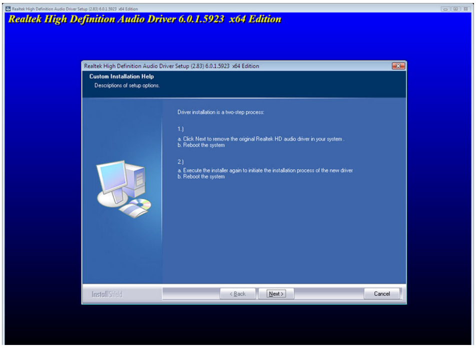

Realtek High Definition Audio Driver - InstallShield Wizard
InstallShield
Cancel

Preparing Setup

Please wait while the InstallShield Wizard prepares the setup.

Realtek High Definition Audio Driver Setup is preparing the InstallShield Wizard, which will guide you through the rest of the setup process. Please wait.

3. Click Next to begin the installation.


Realtek High Definition Audio Driver Setup (2.83) 6.0.1.5923 x64 Edition
Realtek High Definition Audio Driver 6.0.1.5923 x64 Edition
Realtek High Definition Audio Driver Setup (2.83) 6.0.1.5923 x64 Edition
InstallShield
< Back
Next >
Cancel

Custom Installation Help

Descriptions of setup options.

Driver installation is a two-step process:

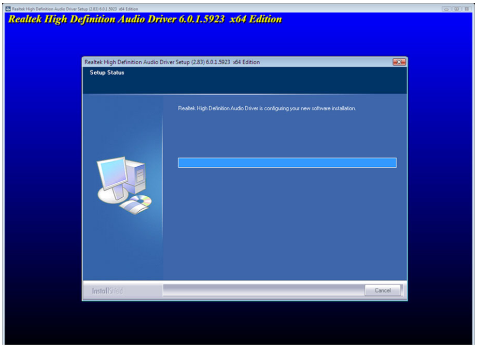
1.)

a. Click Next to remove the original Realtek HD audio driver in your system .
b. Reboot the system

2.)

a. Execute the installer again to initiate the installation process of the new driver
b. Reboot the system

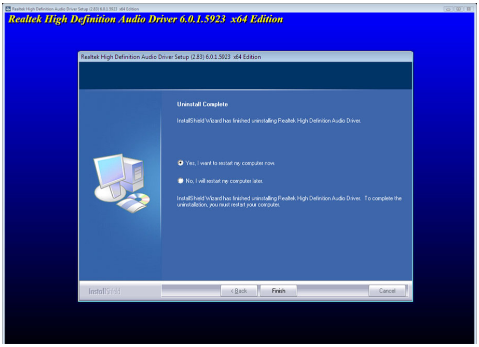
4. The installation program is currently installing the driver.


Realtek High Definition Audio Driver Setup (2.83) 6.0.1.5923 x64 Edition
Realtek High Definition Audio Driver 6.0.1.5923 x64 Edition
Realtek High Definition Audio Driver Setup (2.83) 6.0.1.5923 x64 Edition
Setup Status
InstallShield
Cancel

Realtek High Definition Audio Driver is configuring your new software installation.

5. Click “Yes, I want to restart my computer now” then click Finish.

   Restarting the system will allow the new driver installation to take effect.


Realtek High Definition Audio Driver Setup (2.83) 6.0.1.5923 x64 Edition
Realtek High Definition Audio Driver 6.0.1.5923 x64 Edition
Realtek High Definition Audio Driver Setup (2.83) 6.0.1.5923 x64 Edition
InstallShield
< Back
Finish
Cancel

Uninstall Complete

InstallShield Wizard has finished uninstalling Realtek High Definition Audio Driver.

● Yes, I want to restart my computer now.

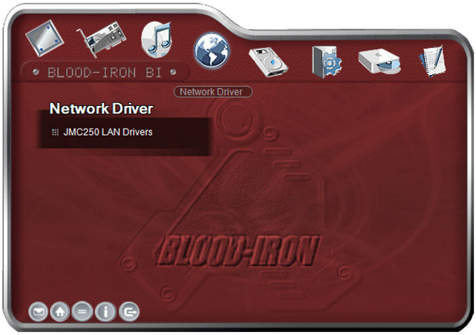
○ No, I will restart my computer later.

InstallShield Wizard has finished uninstalling Realtek High Definition Audio Driver. To complete the uninstallation, you must restart your computer.

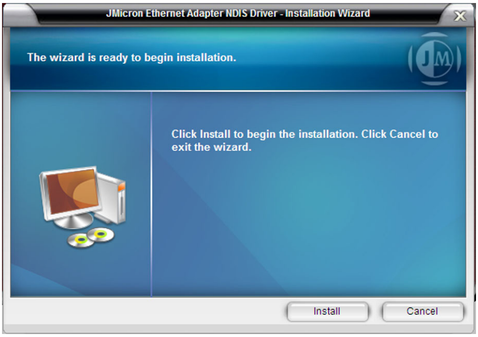
JMC250 LAN Drivers

On the top row of the screen, click the 4th icon to open the Network Driver menu.

1. Click “JMC250 LAN Drivers”.


BLOOD-IRON BI
Network Driver
Network Driver
JMC250 LAN Drivers
BLOOD-IRON

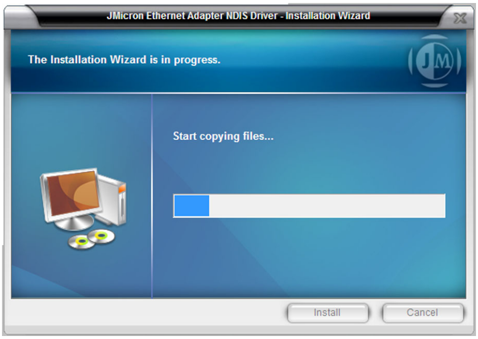
2. Click Install to begin the installation.


JMicron Ethernet Adapter NDIS Driver - Installation Wizard

The wizard is ready to begin installation.

Click Install to begin the installation. Click Cancel to exit the wizard.
Install
Cancel

3. The installation program is now installing the driver.

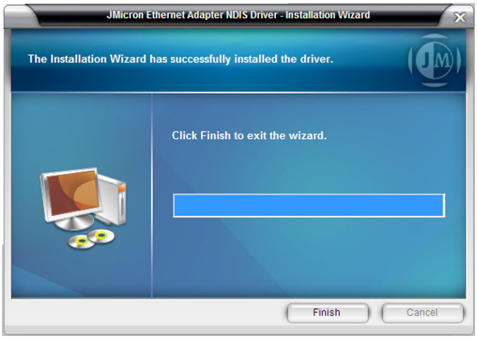

JMicron Ethernet Adapter NDIS Driver - Installation Wizard

The Installation Wizard is in progress.

Start copying files...
Install
Cancel

4. Click Finish.

5. Reboot the system for the driver to take effect.



JMicron Ethernet Adapter NDIS Driver - Installation Wizard
Finish
Cancel

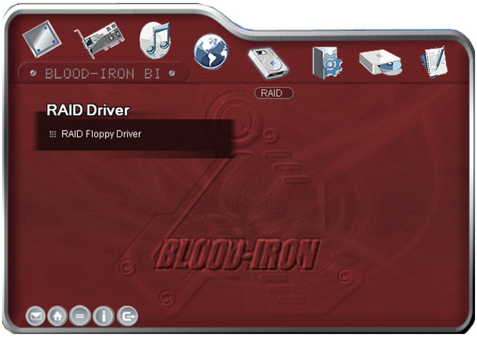
The Installation Wizard has successfully installed the driver.

Click Finish to exit the wizard.

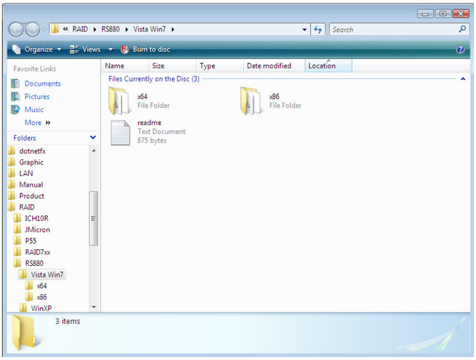
RAID Floppy Driver

On the top row of the screen, click the 5th icon to open the RAID Driver menu.

1. Click "RAID Floppy Driver".


BLOOD-IRON BI
RAID
RAID Driver
RAID Floppy Driver
BLOOD-IRON

2. Windows Explorer will appear showing the folder where the driver files are located in the DVD.


« RAID ▸ RS880 ▸ Vista Win7 ▸
Search
Organize
Views
Burn to disc
Favorite Links
Documents
Pictures
Music
More »
Folders
dotnetfx
Graphic
LAN
Manual
Product
RAID
ICH10R
JMicron
P55
RAID7xx
RS880
Vista Win7
x64
x86
WinXP
Name
Size
Type
Date modified
Location
Files Currently on the Disc (3)
x64
File Folder
x86
File Folder
readme
Text Document
875 bytes
3 items

3. You must create a RAID driver floppy diskette which is needed when you install the RAID driver during Windows installation.

   Run the appropriate execution file.

4. Insert a blank floppy diskette then click OK.

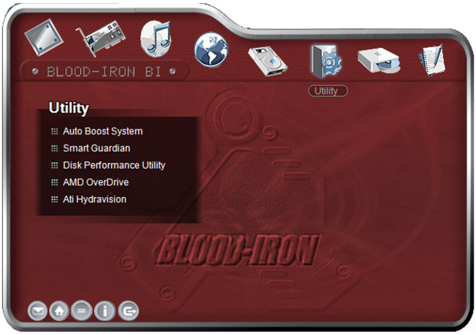
5. The system will format and write the necessary driver files into the diskette.

Smart Guardian

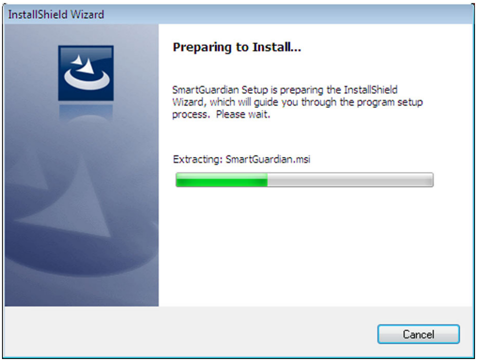
The Smart Guardian utility is capable of monitoring the system's temperature, fan speed, voltage, etc. and allows you to manually set a range (Highest and Lowest Limit) to the items being monitored. If the settings/values are over or under the set range, a warning message will pop-up. The utility can also be configured so that a beeping alarm will sound whenever an error occurs. We recommend that you use the "Default Setting" which is the ideal setting that would keep the system in good working condition.

On the top row of the screen, click the 6th icon to open the Utility menu.

1. Click "Smart Guardian".


BLOOD-IRON BI
Utility
Utility
Auto Boost System
Smart Guardian
Disk Performance Utility
AMD OverDrive
Ati Hydravision
BLOOD-IRON

2. The installation program is extracting the files needed to install the utility.

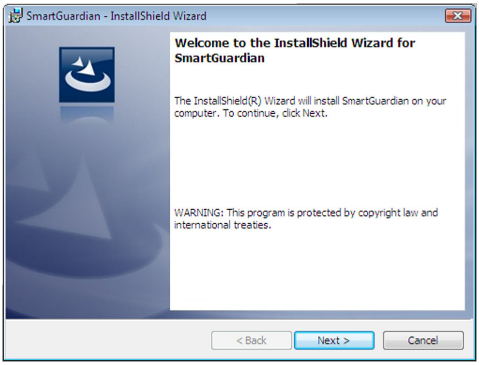

InstallShield Wizard
Cancel

Preparing to Install...

SmartGuardian Setup is preparing the InstallShield Wizard, which will guide you through the program setup process. Please wait.

Extracting: SmartGuardian.msi

3. The installation program is now ready to install the utility. Click Next.

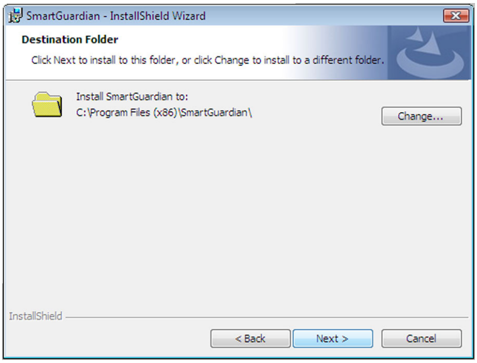

SmartGuardian - InstallShield Wizard
< Back
Next >
Cancel

Welcome to the InstallShield Wizard for SmartGuardian

The InstallShield(R) Wizard will install SmartGuardian on your computer. To continue, click Next.

WARNING: This program is protected by copyright law and international treaties.

4. Click Next to install to the designated folder or click Change to select another folder.

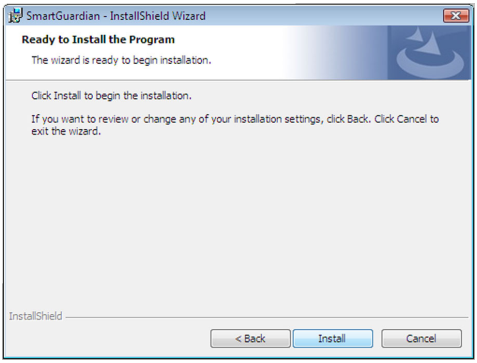

SmartGuardian - InstallShield Wizard
Change...
InstallShield
< Back
Next >
Cancel

Destination Folder

Click Next to install to this folder, or click Change to install to a different folder.

Install SmartGuardian to:
C:\Program Files (x86)\SmartGuardian\

5. Click Install to begin installation.


SmartGuardian - InstallShield Wizard
InstallShield
< Back
Install
Cancel

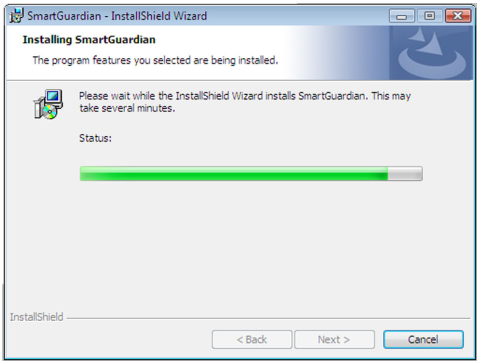
Ready to Install the Program

The wizard is ready to begin installation.

Click Install to begin the installation.

If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.

6. The installation program is currently installing the utility.


SmartGuardian - InstallShield Wizard
InstallShield
< Back
Next >
Cancel

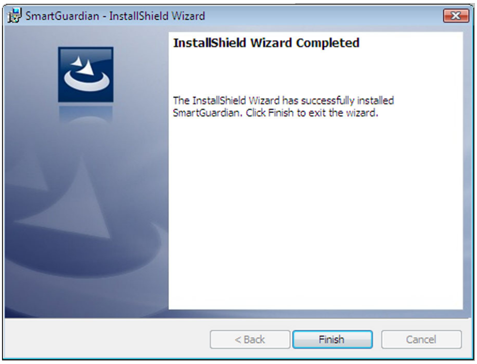
Installing SmartGuardian

The program features you selected are being installed.

Please wait while the InstallShield Wizard installs SmartGuardian. This may take several minutes.

Status:

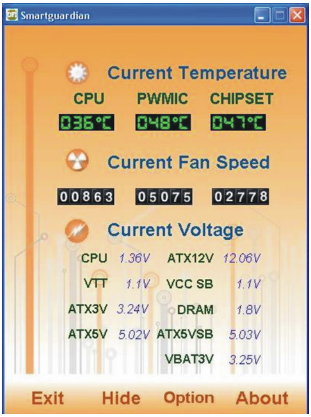
7. Click Finish. Reboot the system for the driver to take effect.


SmartGuardian - InstallShield Wizard
< Back
Finish
Cancel

InstallShield Wizard Completed

The InstallShield Wizard has successfully installed SmartGuardian. Click Finish to exit the wizard.

8. After rebooting the system, you will find the Smart Guardian icon displayed on the screen. Double-click the icon to run the utility.


Smartguardian
Exit
Hide
Option
About

Current Temperature

CPU 036°C
PWMIC 048°C
CHIPSET 047°C

Current Fan Speed

00863
05075
02778

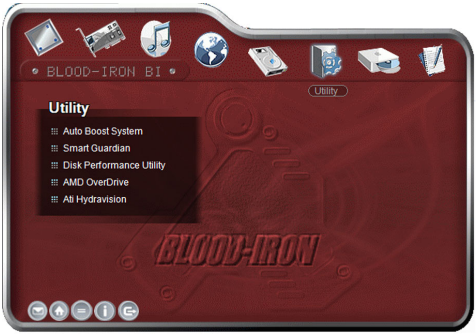
Current Voltage

CPU 1.36V
ATX12V 12.06V
VTT 1.1V
VCC SB 1.1V
ATX3V 3.24V
DRAM 1.8V
ATX5V 5.02V
ATX5VSB 5.03V
VBAT3V 3.25V

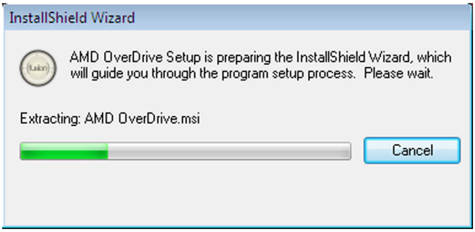
AMD OverDrive

On the top row of the screen, click the 6th icon to open the Utility menu.

1. Click “AMD OverDrive”.


BLOOD-IRON BI
Utility
Utility
Auto Boost System
Smart Guardian
Disk Performance Utility
AMD OverDrive
Ati Hydravision
BLOOD-IRON

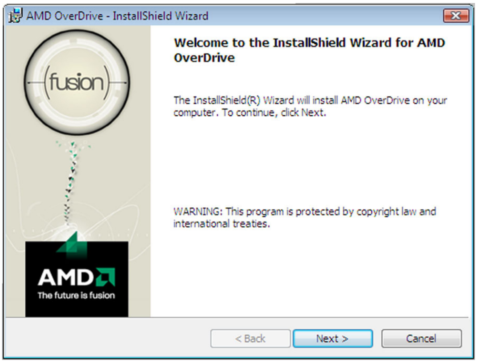
2. The installation program is extracting the files needed to install the utility.


InstallShield Wizard
fusion
Cancel

AMD OverDrive Setup is preparing the InstallShield Wizard, which will guide you through the program setup process. Please wait.

Extracting: AMD OverDrive.msi

3. The installation program is now ready to install the utility. Click Next.

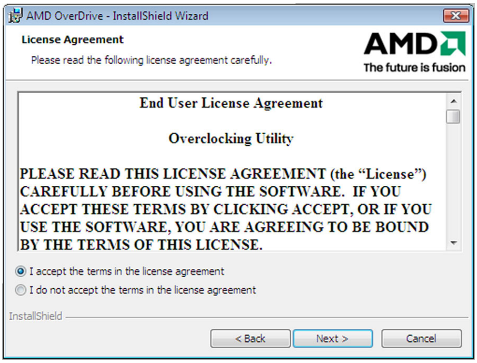

AMD OverDrive - InstallShield Wizard
fusion
AMD
The future is fusion
< Back
Next >
Cancel

Welcome to the InstallShield Wizard for AMD OverDrive

The InstallShield(R) Wizard will install AMD OverDrive on your computer. To continue, click Next.

WARNING: This program is protected by copyright law and international treaties.

4. Read the license agreement. Click "I accept the terms in the license agreement" then click Next.


AMD OverDrive - InstallShield Wizard
AMD
The future is fusion
InstallShield
< Back
Next >
Cancel

License Agreement

Please read the following license agreement carefully.

End User License Agreement

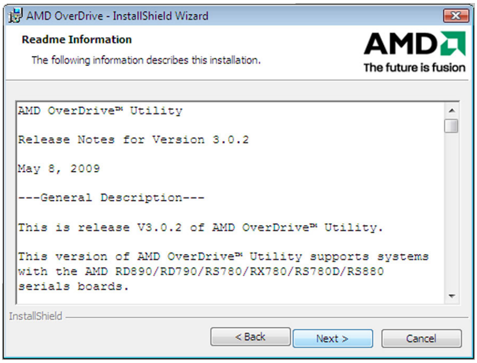
Overclocking Utility

PLEASE READ THIS LICENSE AGREEMENT (the "License") CAREFULLY BEFORE USING THE SOFTWARE. IF YOU ACCEPT THESE TERMS BY CLICKING ACCEPT, OR IF YOU USE THE SOFTWARE, YOU ARE AGREEING TO BE BOUND BY THE TERMS OF THIS LICENSE.

● I accept the terms in the license agreement

○ I do not accept the terms in the license agreement

5. Go through the readme document for system requirements and installation tips then click Next.

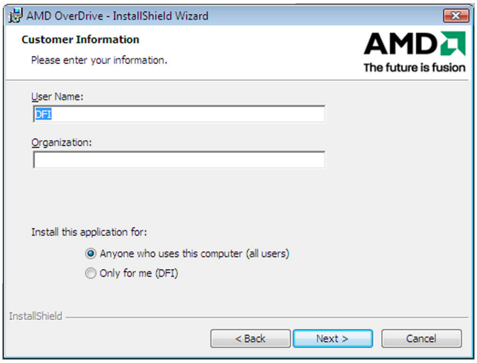

AMD OverDrive - InstallShield Wizard
AMD
The future is fusion
InstallShield
< Back
Next >
Cancel

Readme Information

The following information describes this installation.

```
AMD OverDrive™ Utility

Release Notes for Version 3.0.2

May 8, 2009

---General Description---

This is release V3.0.2 of AMD OverDrive™ Utility.

This version of AMD OverDrive™ Utility supports systems
with the AMD RD890/RD790/RS780/RX780/RS780D/RS880
serials boards.
```

6. Fill in the necessary information then click Next.


AMD OverDrive - InstallShield Wizard
AMD
The future is fusion
InstallShield
< Back
Next >
Cancel

Customer Information

Please enter your information.

User Name: DFI

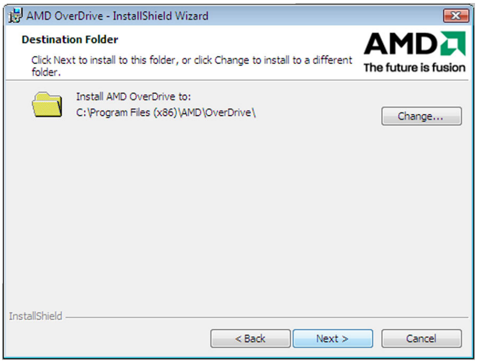
Organization:

Install this application for:

● Anyone who uses this computer (all users)

○ Only for me (DFI)

7. Click Next to install to the designated folder or click Change to select another folder.



AMD OverDrive - InstallShield Wizard

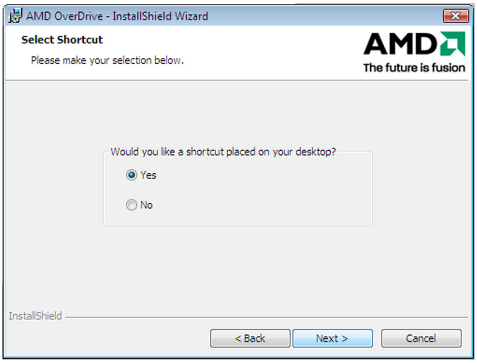
Destination Folder

Click Next to install to this folder, or click Change to install to a different folder.

Install AMD OverDrive to:
C:\Program Files (x86)\AMD\OverDrive\

AMD
The future is fusion
Change...
InstallShield
< Back
Next >
Cancel

8. Click Yes if you want to create a shortcut on your desktop, then click Next.



AMD OverDrive - InstallShield Wizard

Select Shortcut

Please make your selection below.

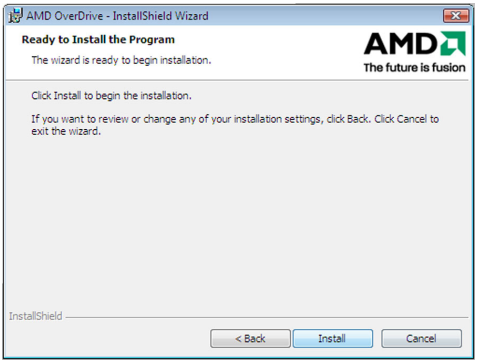
Would you like a shortcut placed on your desktop?

● Yes

○ No

AMD
The future is fusion
InstallShield
< Back
Next >
Cancel

9. Click Install to begin the installation.



AMD OverDrive - InstallShield Wizard

Ready to Install the Program

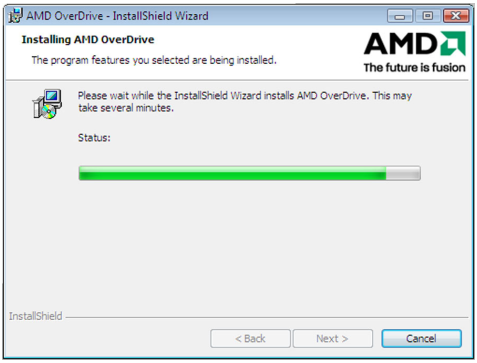
The wizard is ready to begin installation.

Click Install to begin the installation.

If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.

AMD
The future is fusion
InstallShield
< Back
Install
Cancel

10. The installation program is currently installing the utility.


AMD OverDrive - InstallShield Wizard

Installing AMD OverDrive

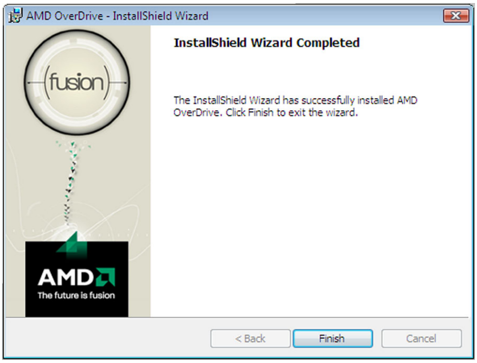
The program features you selected are being installed.

Please wait while the InstallShield Wizard installs AMD OverDrive. This may take several minutes.

Status:

AMD
The future is fusion
InstallShield
< Back
Next >
Cancel

11. Click Finish.


AMD OverDrive - InstallShield Wizard

InstallShield Wizard Completed

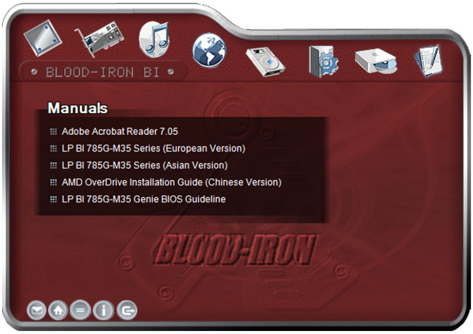
The InstallShield Wizard has successfully installed AMD OverDrive. Click Finish to exit the wizard.

fusion
AMD
The future is fusion
< Back
Finish
Cancel

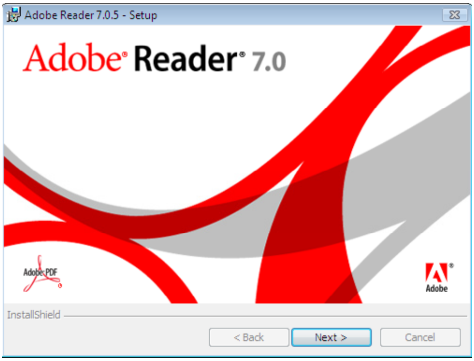
Adobe Acrobat Reader 7.05

On the top row of the screen, click the last icon to open the Manuals menu.

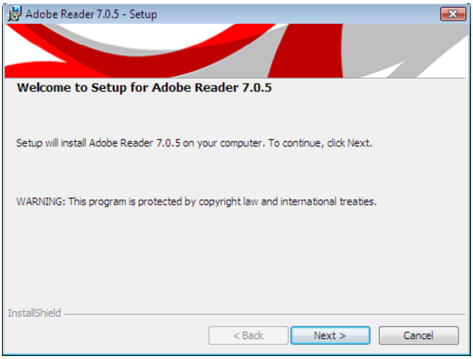
1. Click "Adobe Acrobat Reader 7.05".


BLOOD-IRON BI
Manuals
Adobe Acrobat Reader 7.05
LP BI 785G-M35 Series (European Version)
LP BI 785G-M35 Series (Asian Version)
AMD OverDrive Installation Guide (Chinese Version)
LP BI 785G-M35 Genie BIOS Guideline
BLOOD-IRON

2. Click Next to continue.


Adobe Reader 7.0.5 - Setup
Adobe® Reader® 7.0
Adobe PDF
Adobe
InstallShield
< Back
Next >
Cancel

3. Setup is now ready to install. Click Next.


Adobe Reader 7.0.5 - Setup

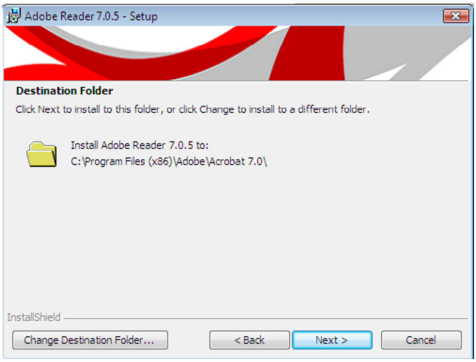
Welcome to Setup for Adobe Reader 7.0.5

Setup will install Adobe Reader 7.0.5 on your computer. To continue, click Next.

WARNING: This program is protected by copyright law and international treaties.

InstallShield
< Back
Next >
Cancel

4. Click Next to install or click Change Destination Folder to select another folder.



Adobe Reader 7.0.5 - Setup

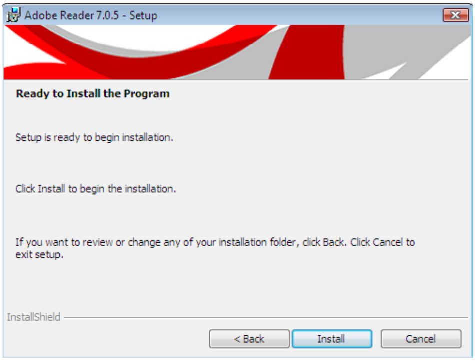
Destination Folder

Click Next to install to this folder, or click Change to install to a different folder.

Install Adobe Reader 7.0.5 to:
C:\Program Files (x86)\Adobe\Acrobat 7.0\

InstallShield
Change Destination Folder...
< Back
Next >
Cancel

5. Click Install to begin installation.



Adobe Reader 7.0.5 - Setup

Ready to Install the Program

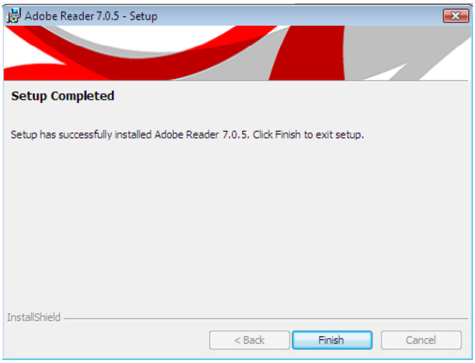
Setup is ready to begin installation.

Click Install to begin the installation.

If you want to review or change any of your installation folder, click Back. Click Cancel to exit setup.

InstallShield
< Back
Install
Cancel

6. Click Finish to exit installaion.



Adobe Reader 7.0.5 - Setup

Setup Completed

Setup has successfully installed Adobe Reader 7.0.5. Click Finish to exit setup.

InstallShield
< Back
Finish
Cancel

Chapter 5 - RAID

The AMD SB710 chip alows configuring RAID on Serial ATA drives. It supports RAID 0/1/0+1(10).

RAID Levels

RAID 0 (Striped Disk Array without Fault Tolerance)

RAID 0 uses two new identical hard disk drives to read and write data in parallel, interleaved stacks. Data is divided into stripes and each stripe is written alternately between two disk drives. This improves the I/O performance of the drives at different channel; however it is not fault tolerant. A failed disk will result in data loss in the disk array.

RAID 1 (Mirroring Disk Array with Fault Tolerance)

RAID 1 copies and maintains an identical image of the data from one drive to the other drive. If a drive fails to function, the disk array management software directs all applications to the other drive since it contains a complete copy of the drive's data. This enhances data protection and increases fault tolerance to the entire system. Use two new drives or an existing drive and a new drive but the size of the new drive must be the same or larger than the existing drive.

RAID 0+1 (Striping and Mirroring)

RAID 0+1 is a combination of data striping and data mirroring providing the benefits of both RAID 0 and RAID 1. Use four new drives or an existing drive and three new drives for this configuration.

Settings

To enable the RAID function, the following settings are required.

1. Connect the Serial ATA drives.
2. Configure Serial ATA in the Award BIOS.
3. Configure RAID in the RAID BIOS.
4. Install the RAID driver during OS installation.

Step 1: Connect the Serial ATA Drives

Refer to chapter 2 for details on connecting the Serial ATA drives.

Important:

1. Make sure you have installed the Serial ATA drives and connected the data cables otherwise you won't be able to enter the RAID BIOS utility.
2. Treat the cables with extreme caution especially while creating RAID. A damaged cable will ruin the entire installation process and operating system. The system will not boot and you will lost all data in the hard drives. Please give special attention to this warning because there is no way of recovering back the data.

Step 2: Configure Serial ATA in the Award BIOS

1. Power-on the system then press <Del> to enter the main menu of the Award BIOS.

2. Configure Serial ATA in the appropriate fields.

3. Press <Esc> to return to the main menu of the BIOS setup utility. Select "Save & Exit Setup" then press <Enter>.

4. Type <Y> and press <Enter>.

5. Reboot the system.

Step 3: Configure RAID in the RAID BIOS

When the system powers-up and all drives have been detected, the AMD BIOS status message screen will appear. Press the <F4> key to enter the utility. The utility allows you to build a RAID system on Serial ATA drives.

Step 4: Install the RAID Driver During OS Installation

The RAID driver must be installed during the Windows® XP installation using the F6 installation method. This is required in order to install the operating system onto a hard drive or RAID volume when in RAID mode or onto a hard drive when in AHCI mode.

1. Start Windows Setup by booting from the installation CD.

2. Press <F6> when prompted in the status line with the 'Press F6 if you need to install a third party SCSI or RAID driver' message.

3. Press <S> to "Specify Additional Device".

4. At this point you will be prompted to insert a floppy disk containing the RAID driver. Insert the RAID driver diskette.

5. Locate for the drive where you inserted the diskette then select RAID or AHCI controller that corresponds to your BIOS setup. Press <Enter> to confirm.

You have successfully installed the driver. However you must continue installing the OS. Leave the floppy disk in the floppy drive until the system reboots itself because Windows setup will need to copy the files again from the floppy disk to the Windows installation folders. After Windows setup has copied these files again, remove the floppy diskette so that Windows setup can reboot as needed.

Chapter 6 - Hybrid Graphics

Based on the ATI CrossFire™ multi-GPU technology, Hybrid Graphics takes gaming experience to the next level. Hybrid Graphics is a combination of the integrated graphics and a discrete graphics card delivering high quality gaming images and improved performance. Its multi-GPU performance capabilities enhance gaming performance, productivity and platform power efficiency to the mainstream PC.

Basic Requirements

1. Windows® Vista operating system.
2. A Hybrid-Graphics-supported discrete graphics card.
3. Minimum of 1GB system memory.
4. 256MB onboard graphics RAM.

Hybrid Graphics Setup

1. Configure the BIOS.

   Set the "UMA Frame Buffer Size" field to 256MB.

   Set the "Surround View" field to Enabled.

   Refer to the "IGX Configuration" section (Advanced Chipset Features submenu of the Award BIOS) in chapter 3 for more information.

2. Install the AMD RS880 chipset driver then restart the system for the new driver to take effect.

   Refer to the "AMD RS880 Driver" section in chapter 4 for more information.

3. Install a graphics card. Hybrid Graphics supports only one discrete graphics card to work with the integrated GPU.

4. Install the graphics driver. Refer to the "ATI Radeon Driver" section in chapter 4 for more information.

5. Run the ATI Catalyst Control Center utility to enable Hybrid Graphics.

Chapter 7 - Cool'n'Quiet Technology

Cool'n'Quiet Technology

The AMD Cool'n'Quiet™ technology allows the system to detect the CPU's tasks and utilization status. When the CPU's task slows down, the system effectively lowers power consumption by lowering its CPU speed and voltage, subsequently decreasing its noise level.

To enable the Cool'n'Quiet™ technology, the following settings are required.

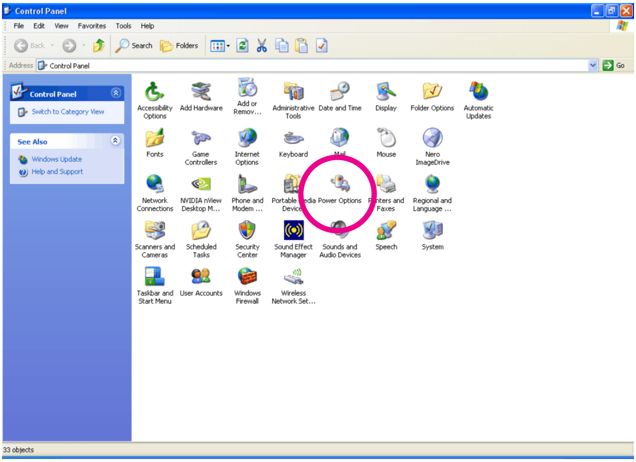
1. Install the Cool'n'Quiet™ driver.
2. Configure Power Management in Windows.

Step 1: Install the Cool'n'Quiet™ Driver

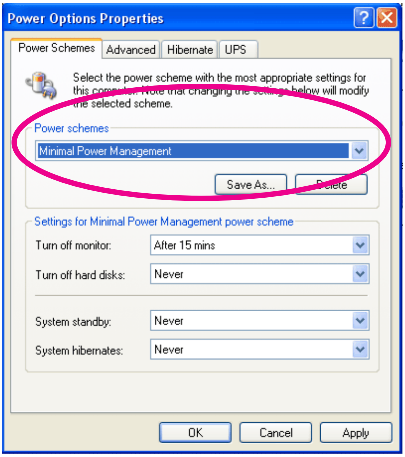
AMD's website provides free download of the Cool'n'Quiet™ driver. Make sure to install the appropriate driver for the CPU that you are using.

Step 2: Configure Power Management in Windows

1. On the Windows desktop, click Start then select Control Panel.
2. In Control Panel, double-click the Power Options icon.


Control Panel
File Edit View Favorites Tools Help
Back
Search
Folders
Address Control Panel
Go
Control Panel
Switch to Category View
See Also
Windows Update
Help and Support
Accessibility Options
Add Hardware
Add or Remov...
Administrative Tools
Date and Time
Display
Folder Options
Automatic Updates
Fonts
Game Controllers
Internet Options
Keyboard
Mail
Mouse
Nero ImageDrive
Network Connections
NVIDIA nView Desktop M...
Phone and Modem ...
Portable Media Devices
Power Options
Printers and Faxes
Regional and Language ...
Scanners and Cameras
Scheduled Tasks
Security Center
Sound Effect Manager
Sounds and Audio Devices
Speech
System
Taskbar and Start Menu
User Accounts
Windows Firewall
Wireless Network Set...
33 objects

3. In the Power Schemes tab, select Minimal Power Management under the Power schemes section then click OK.



Power Options Properties
Power Schemes
Advanced
Hibernate
UPS
Save As...
Delete
OK
Cancel
Apply

Select the power scheme with the most appropriate settings for this computer. Note that changing the settings below will modify the selected scheme.

Power schemes: Minimal Power Management

Settings for Minimal Power Management power scheme

Turn off monitor: After 15 mins

Turn off hard disks: Never

System standby: Never

System hibernates: Never

Chapter 8 - Dual Display Configuration

Display Interfaces

The system board is equipped with VGA (D-Sub), DVI-I (DVI-D signal) and HDMI ports.

VGA (D-Sub) Port

The VGA port is a 15-pin D-Sub connector. Connect a monitor that supports D-Sub connection to this port.

DVI-I (DVI-D signal) Port

The DVI-I port supports DVI-D signal only. Connect a digital LCD monitor to this port.

Note:

- The DVI-I port does not support a DVI-I-to-VGA adapter (that is used for connecting an analog VGA monitor).
- The system board does not support simultaneous display from DVI-I and HDMI.

HDMI Port

HDMI (High-Definition Multimedia Interface) provides an all-digital audio/video interface to transmit the uncompressed audio/video signals. HDMI is HDCP compliant. Connect an HDMI audio/video device to this port. The HDMI technology can support maximum resolution of 1920x1080p but the actual resolution displayed will depend on the monitor being used.

Jumper Setting

After connecting the HDMI device, set jumpers JP20 and JP21 to HDMI. Refer to the HDMI/DVI Select section in chapter 2 for more information.

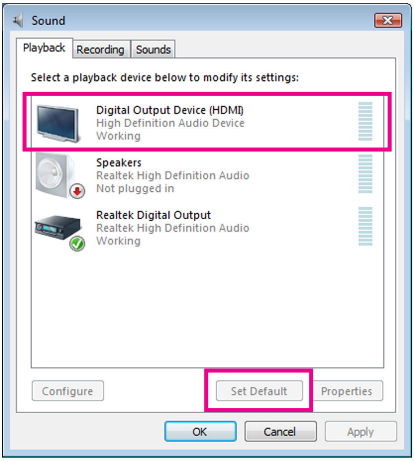
Sound Playback

The Sound Playback's default device must be an HDMI device. The HDMI option shown in the Sound Playback dialog box may vary depending on the Operating System used.

The HDMI audio output supports AC3, DTS and 2-channel-LPCM formats. AC3 and DTS require the use of an external decoder for decoding.

The screen below was captured from Windows Vista.

1. Click **Start** and then **Control Panel**.
2. Double-click the **Sound** icon.
3. In the Playback tab, select **Digital Output Device (HDMI)** then click **Set Default**.



Select a playback device below to modify its settings:

Digital Output Device (HDMI)
High Definition Audio Device
Working

Speakers
Realtek High Definition Audio
Not plugged in

Realtek Digital Output
Realtek High Definition Audio
Working

Dual Display Configuration

The table below lists the supported dual display configuration.

Dual Display	
VGA + DVI-I	Supported
VGA + HDMI	Supported
DVI-I + HDMI	Not Supported

Playback of HD DVD and Blu-ray Discs

Refer to the recommended (or better) system requirements for better playback quality.

- Memory
  Two 1GB DDR3 1066MHz memory modules with dual channel mode enabled.

- BIOS Setup
  At least 256MB of UMA Frame Buffer Size (refer to chapter 3 - BIOS Setup, Advanced BIOS Features section for more information).

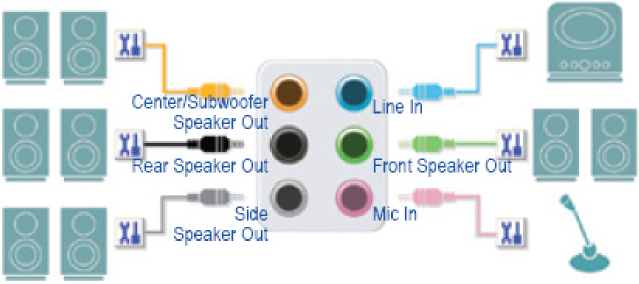
- Playback Software
  CyberLink PowerDVD 8.0 or later
  Note: Hardware Acceleration must be enabled.

- HDCP compliant monitor(s)

Chapter 9 - Audio Configuration

Configuring 2/4/5.1/7.1-Channel Audio

The 6 audio jacks at the rear panel of the system board support 2/4/5.1/7.1-channel audio. The illustration below shows the default audio jack assignments.



Audio Channel Configuration

Audio Channel	Line-in	Line-out	Mic-in	Center/ Subwoofer	Rear R/L	Side R/L
2-channel	✓	✓	✓	-	-	-
4-channel	✓	✓	✓	-	✓	-
5.1-channel	✓	✓	✓	✓	✓	-
7.1-channel	✓	✓	✓	✓	✓	✓

The integrated HD (High Definition) audio provides jack retasking capability that allows you to change the function of each jack through the audio driver.

For example, in a 4-channel audio configuration, if a Side speaker is plugged into the Center/Subwoofer speaker-out jack, you can retask the Center/Subwoofer speaker-out jack to be the Side speaker-out.

To install a microphone, connect your microphone to the Mic-in jack then manually configure the jack for microphone functionality.

Audio signals are simultaneously present on both the front and rear panel audio connections. If you want to mute the rear panel audio (only supported when using an HD front panel audio module), refer to the next section for more information.

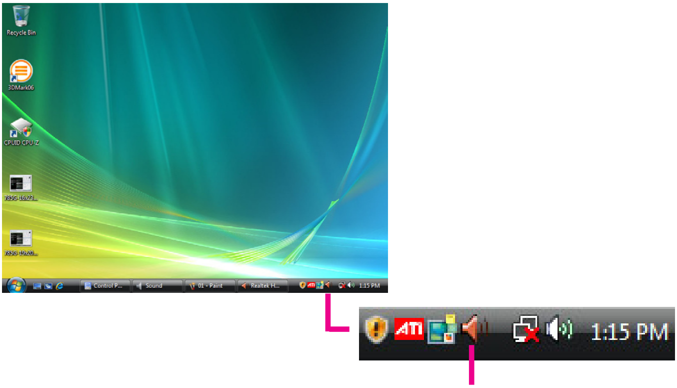
High Definition Audio (HD Audio)

HD Audio includes multiple high quality digital-to-analog converters (DACs) that support 44.1KHz/48KHz/ 96KHz/192KHz sampling rate. HD Audio features multi-streaming capabilities that allow multiple audio streams (in and out) to be simultaneously processed. For example, users can listen to MP3 music, have an Internet chat, make a telephone call over the Internet, etc. all at the same time.

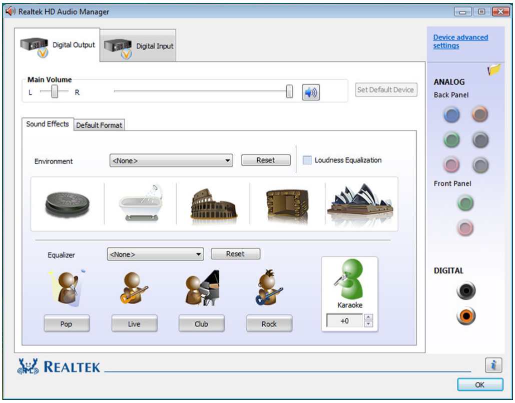
Configuring Speakers

The following illustrations use the Windows Vista operating system.

1. After installing the audio driver, the HD Audio Manager icon will be added to the notification area. Double-click the icon to open HD Audio Manager.

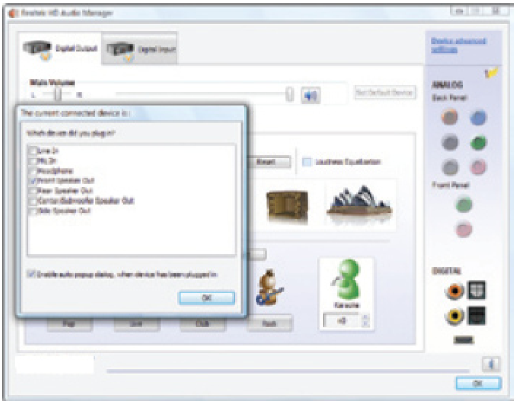

Recycle Bin
3DMark06
CPUID CPU-Z
Control P...
Sound
01 - Paint
Realtek H...
1:15 PM

HD Audio Manager icon


Realtek HD Audio Manager
Digital Output
Digital Input
Device advanced settings
Main Volume
L
R
Set Default Device
ANALOG
Back Panel
Front Panel
DIGITAL
Sound Effects
Default Format
Environment
<None>
Reset
Loudness Equalization
Equalizer
<None>
Reset
Pop
Live
Club
Rock
Karaoke
+0
REALTEK
OK

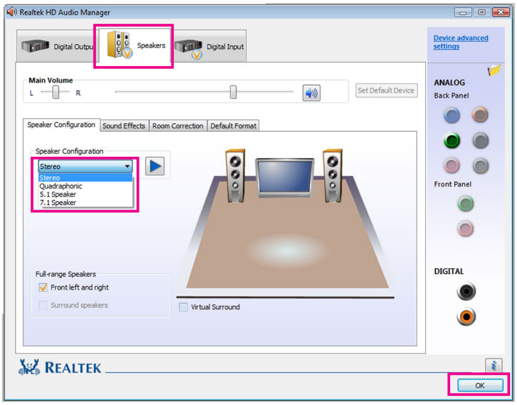
HD Audio Manager

2. Connect a S/PDIF audio device to a S/PDIF port. The **The Current connected device is** dialog box appears. Select the appropriate device then click **OK**.



3. When you plug a speaker, the Speakers tab will appear. Click the **Speakers** tab.

   In **Speaker Configuration**, select Stereo, Quadraphonic, 5.1 Speaker, or 7.1 Speaker, then click **OK**.


Realtek HD Audio Manager
Digital Output
Speakers
Digital Input
Device advanced settings
Main Volume
L
R
Set Default Device
Speaker Configuration
Sound Effects
Room Correction
Default Format
Speaker Configuration
Stereo
Stereo
Quadraphonic
5.1 Speaker
7.1 Speaker
Full-range Speakers
☑ Front left and right
☐ Surround speakers
☐ Virtual Surround
ANALOG
Back Panel
Front Panel
DIGITAL
REALTEK
OK

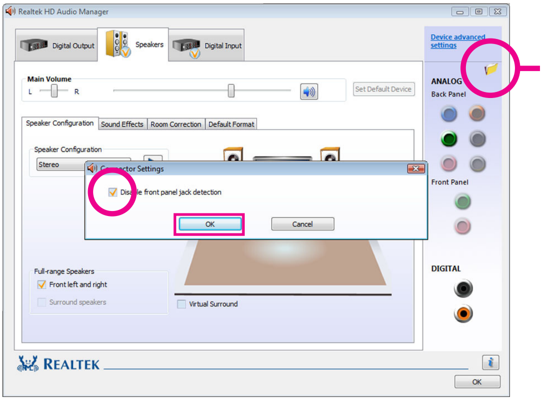
Configuring Sound Effect

Select the sound effect of the headphone or speaker in the Sound Effect tab.

Activating the AC’97 Front Panel Audio Module

If your chassis comes with an AC’97 front panel audio module, you can activate the AC’97 functionality.

1. Click the Tool icon.
2. When the **Connector Settings** dialog box appears, unclick the **Disable front panel jack detection** check box.
3. Click **OK**.


Realtek HD Audio Manager
Digital Output
Speakers
Digital Input
Device advanced settings
Tool icon
Main Volume
L
R
Set Default Device
ANALOG
Back Panel
Speaker Configuration
Sound Effects
Room Correction
Default Format
Speaker Configuration
Stereo
Connector Settings
OK
Cancel
Front Panel
Full-range Speakers
Virtual Surround
DIGITAL
REALTEK
OK

☑ Disable front panel jack detection

☑ Front left and right

☐ Surround speakers

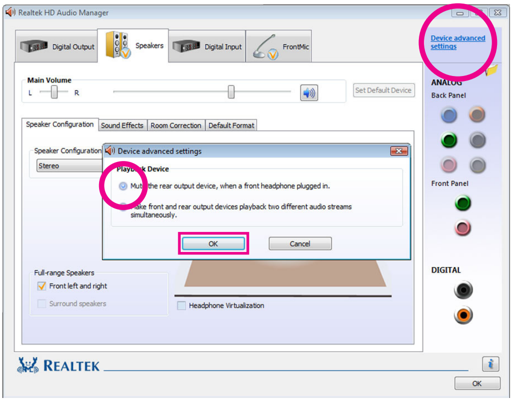
☐ Virtual Surround

Muting the Back Panel Audio (for HD Audio only)

1. Click **Device advanced settings** located on the upper right corner of the screen.

2. Select **Mute the rear output device, when a front headphone plugged in**.

3. Click **OK**.


Realtek HD Audio Manager
Digital Output
Speakers
Digital Input
FrontMic
Device advanced settings
Main Volume
L
R
Set Default Device
ANALOG
Back Panel
Speaker Configuration
Sound Effects
Room Correction
Default Format
Speaker Configuration
Stereo
Front Panel
Full-range Speakers
Front left and right
Surround speakers
Headphone Virtualization
DIGITAL
REALTEK
OK

Device advanced settings

Playb k Device

● Mut the rear output device, when a front headphone plugged in.

○ ake front and rear output devices playback two different audio streams simultaneously.

OK
Cancel

Appendix A - ABS: Auto Boost System

The ABS (Auto Boost System) technology provides the convenience of saving and loading several OC settings. It allows you to use the best OC setting to optimize your system's performance. You can "Auto Boost" your system by simply pressing the <F1> key.

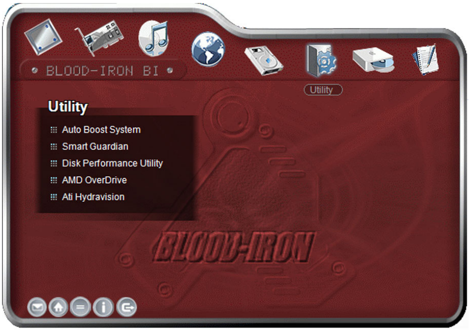
ABS provides the following functions that are easy for users to operate.

- Backup OC profile
- Load OC profile
- Exchange OC profile

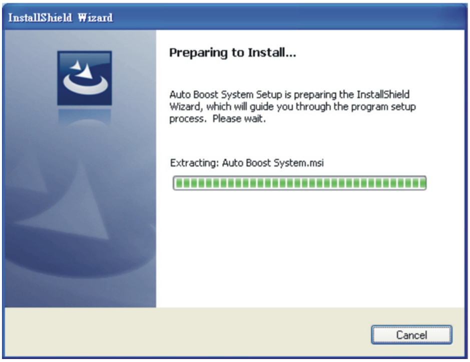
Installing ABS

1. The ABS utility is included in the provided DVD. Insert the DVD into an optical drive. On the top row of the screen, click the 6th icon to open the Utility menu.

2. Click "Auto Boost System".


BLOOD-IRON BI
Utility
Utility
Auto Boost System
Smart Guardian
Disk Performance Utility
AMD OverDrive
Ati Hydravision
BLOOD-IRON

3. The installation wizard is extracting the files needed to install the utility. The wizard will lead you to complete the installation.

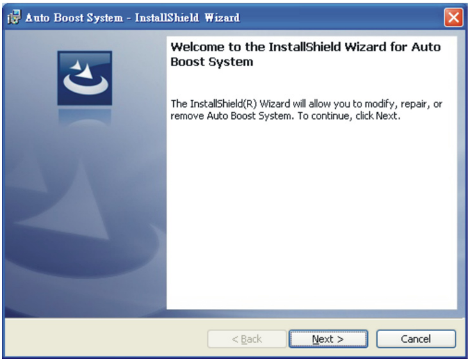

InstallShield Wizard
Cancel

Preparing to Install...

Auto Boost System Setup is preparing the InstallShield Wizard, which will guide you through the program setup process. Please wait.

Extracting: Auto Boost System.msi

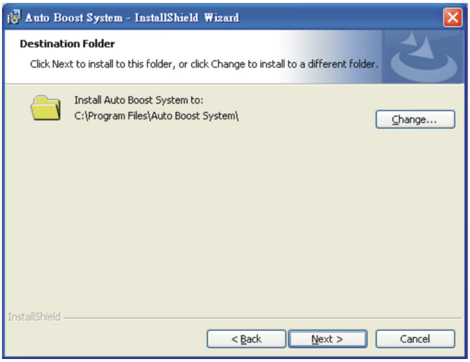
4. Setup is now ready to install the utility. Click Next.


Auto Boost System - InstallShield Wizard
< Back
Next >
Cancel

Welcome to the InstallShield Wizard for Auto Boost System

The InstallShield(R) Wizard will allow you to modify, repair, or remove Auto Boost System. To continue, click Next.

5. Click Next to install to the destination folder or click Change to select another folder.

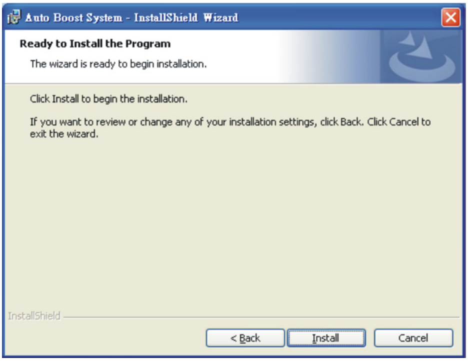

Auto Boost System - InstallShield Wizard
Change...
InstallShield
< Back
Next >
Cancel

Destination Folder

Click Next to install to this folder, or click Change to install to a different folder.

Install Auto Boost System to:
C:\Program Files\Auto Boost System\

6. Click Install to begin the installation.



Auto Boost System - InstallShield Wizard

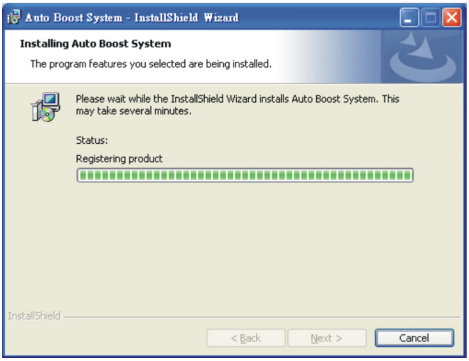
Ready to Install the Program

The wizard is ready to begin installation.

Click Install to begin the installation.

If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.

7. The installation wizard will copy all the necessary files and optimize the ABS features.



Auto Boost System - InstallShield Wizard

Installing Auto Boost System

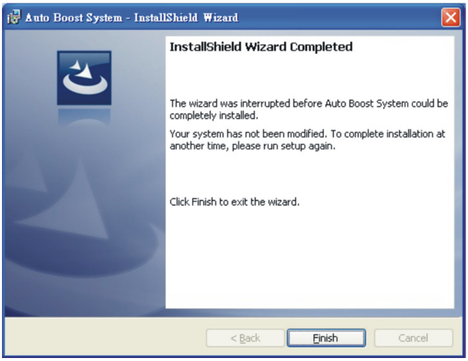
The program features you selected are being installed.

Please wait while the InstallShield Wizard installs Auto Boost System. This may take several minutes.

Status:

Registering product

8. Click Finish to exit setup.



Auto Boost System - InstallShield Wizard

InstallShield Wizard Completed

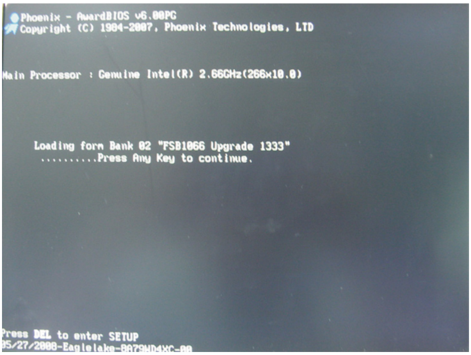
The wizard was interrupted before Auto Boost System could be completely installed.

Your system has not been modified. To complete installation at another time, please run setup again.

Click Finish to exit the wizard.

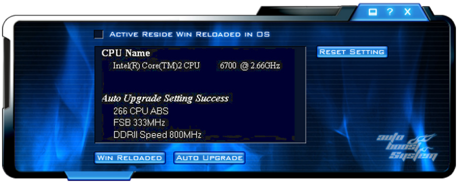
The ABS Utility

1. To run the ABS utility, power up your system then press F1. The screen will show the CPU upgrade information. Press "Any Key" to continue.



```
Phoenix - AwardBIOS v6.00PG
Copyright (C) 1984-2007, Phoenix Technologies, LTD

Main Processor : Genuine Intel(R) 2.66GHz(266x10.0)


     Loading form Bank 02 "FSB1066 Upgrade 1333"
      ..........Press Any Key to continue.


Press DEL to enter SETUP
05/27/2008-Eaglelake-8A79WD4XC-00
```

2. When the system enters the operating system, the ABS utility will appear and display the system's information. Click Auto Upgrade.



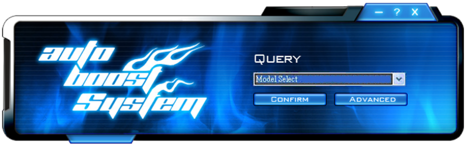
☐ Active Reside Win Reloaded in OS

CPU Name
Intel(R) Core(TM)2 CPU 6700 @ 2.66GHz

Auto Upgrade Setting Success
266 CPU ABS
FSB 333MHz
DDRII Speed 800MHz

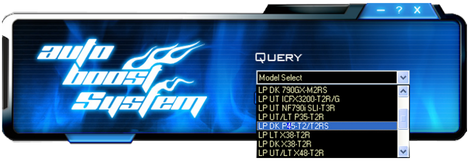
Reset Setting
Win Reloaded
Auto Upgrade
auto boost System

3. The screen on the right will appear.



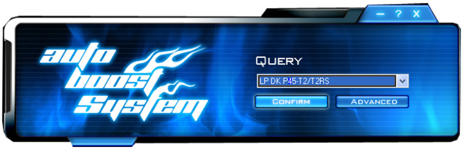
auto boost System
Query
Model Select
Confirm
Advanced

4. Select the system board in use.



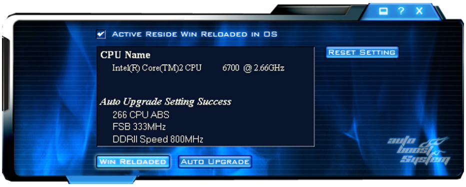
auto boost System
Query
Model Select
LP DK 790GX-M2RS
LP UT ICFX3200-T2R/G
LP UT NF790i SLI-T3R
LP UT/LT P35-T2R
LP DK P45-T2/T2RS
LP LT X38-T2R
LP DK X38-T2R
LP UT/LT X48-T2R

5. Click Confirm.


auto boost System
— ? X
QUERY
CONFIRM
ADVANCED

LP DK P45-T2/T2RS

6. ABS supports Win Reloaded and Auto Upgrade features. Click Auto Upgrade.

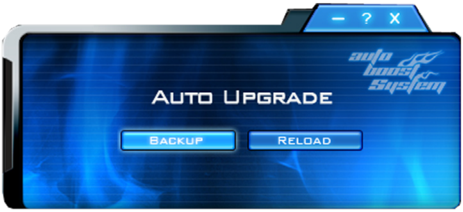

? X
RESET SETTING
WIN RELOADED
AUTO UPGRADE
auto boost System

☑ ACTIVE RESIDE WIN RELOADED IN OS

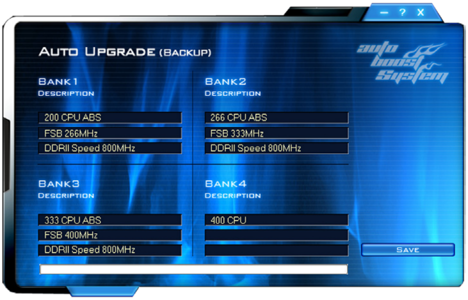
CPU Name
Intel(R) Core(TM)2 CPU 6700 @ 2.66GHz

Auto Upgrade Setting Success
266 CPU ABS
FSB 333MHz
DDRII Speed 800MHz

7. Click Backup.


— ? X
auto boost System
AUTO UPGRADE
BACKUP
RELOAD

8. The default settings will appear on the screen. Click Save.

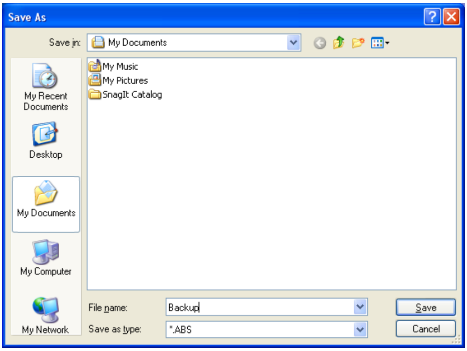

— ? X
auto boost System
SAVE

AUTO UPGRADE (BACKUP)

BANK1 DESCRIPTION	BANK2 DESCRIPTION
200 CPU ABS	266 CPU ABS
FSB 266MHz	FSB 333MHz
DDRII Speed 800MHz	DDRII Speed 800MHz

BANK3 DESCRIPTION	BANK4 DESCRIPTION
333 CPU ABS	400 CPU
FSB 400MHz	
DDRII Speed 800MHz	

9. Enter a name for the default setting then click Save. You have just created a backup file of the board's default setting.



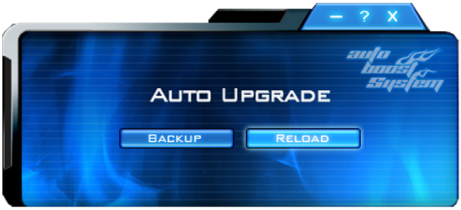
Save in: My Documents

File name: Backup

Save as type: *.ABS

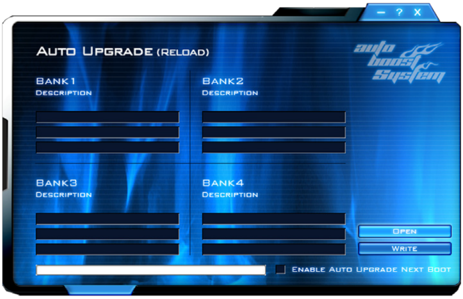
Save As
My Music
My Pictures
SnagIt Catalog
My Recent Documents
Desktop
My Documents
My Computer
My Network
Save
Cancel

10. If in any case a new OC setting causes system instability, you can always retrieve the backup file saved earlier by clicking Reload.



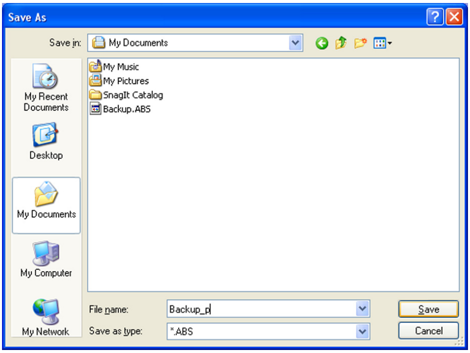
auto boost system
Auto Upgrade
Backup
Reload

11. Click Open.



auto boost system
Auto Upgrade (Reload)
Bank1
Description
Bank2
Description
Bank3
Description
Bank4
Description
Open
Write
☐ Enable Auto Upgrade Next Boot

12. Select the backup file then click Open.


Save As
My Recent Documents
Desktop
My Documents
My Computer
My Network
Save
Cancel

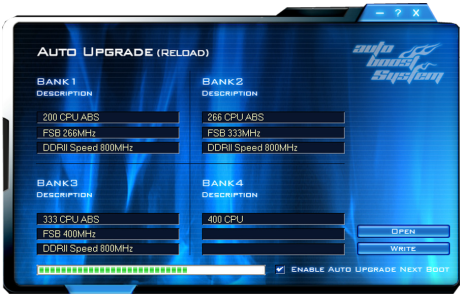
Save in: My Documents

My Music
My Pictures
SnagIt Catalog
Backup.ABS

File name: Backup_p

Save as type: *.ABS

13. Click Write to load Banks 1-4 into the BIOS.


AUTO UPGRADE (RELOAD)
auto boost System
OPEN
WRITE

BANK1 DESCRIPTION
200 CPU ABS
FSB 266MHz
DDRII Speed 800MHz

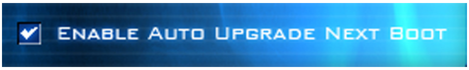
BANK2 DESCRIPTION
266 CPU ABS
FSB 333MHz
DDRII Speed 800MHz

BANK3 DESCRIPTION
333 CPU ABS
FSB 400MHz
DDRII Speed 800MHz

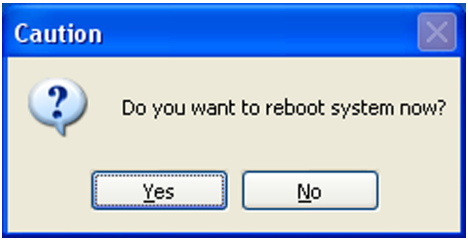
BANK4 DESCRIPTION
400 CPU

☑ ENABLE AUTO UPGRADE NEXT BOOT

If you want the system to auto upgrade the setting the next time you boot the system, click “Enable Auto Upgrade Next Boot”.


☑ ENABLE AUTO UPGRADE NEXT BOOT

14. Click Yes to reboot.



Caution

Do you want to reboot system now?

Important:

1. We strongly recommend that you backup the default setting. If in any case your overclock setting causes system instability, you can always retrieve the default setting by reloading the backup file.
2. Everytime you change the BIOS settings, remember to always backup the file because the previous backup file will not match the new BIOS settings therefore it will not work.

Appendix B - Troubleshooting

Troubleshooting Checklist

This chapter of the manual is designed to help you with problems that you may encounter with your personal computer. To efficiently troubleshoot your system, treat each problem individually. This is to ensure an accurate diagnosis of the problem in case a problem has multiple causes.

Some of the most common things to check when you encounter problems while using your system are listed below.

1. The power switch of each peripheral device is turned on.
2. All cables and power cords are tightly connected.
3. The electrical outlet to which your peripheral devices are connected is working. Test the outlet by plugging in a lamp or other electrical device.
4. The monitor is turned on.
5. The display's brightness and contrast controls are adjusted properly.
6. All add-in boards in the expansion slots are seated securely.
7. Any add-in board you have installed is designed for your system and is set up correctly.

Monitor/Display

If the display screen remains dark after the system is turned on:

1. Make sure that the monitor's power switch is on.
2. Check that one end of the monitor's power cord is properly attached to the monitor and the other end is plugged into a working AC outlet. If necessary, try another outlet.
3. Check that the video input cable is properly attached to the monitor and the system's display adapter.
4. Adjust the brightness of the display by turning the monitor's brightness control knob.

The picture seems to be constantly moving.

1. The monitor has lost its vertical sync. Adjust the monitor's vertical sync.
2. Move away any objects, such as another monitor or fan, that may be creating a magnetic field around the display.
3. Make sure your video card's output frequencies are supported by this monitor.

The screen seems to be constantly wavering.

1. If the monitor is close to another monitor, the adjacent monitor may need to be turned off. Fluorescent lights adjacent to the monitor may also cause screen wavering.

Power Supply

When the computer is turned on, nothing happens.

1. Check that one end of the AC power cord is plugged into a live outlet and the other end properly plugged into the back of the system.
2. Make sure that the voltage selection switch on the back panel is set for the correct type of voltage you are using.
3. The power cord may have a "short" or "open". Inspect the cord and install a new one if necessary.

Floppy Drive

The computer cannot access the floppy drive.

1. The floppy diskette may not be formatted. Format the diskette and try again.
2. The diskette may be write-protected. Use a diskette that is not write-protected.
3. You may be writing to the wrong drive. Check the path statement to make sure you are writing to the targeted drive.
4. There is not enough space left on the diskette. Use another diskette with adequate storage space.

Hard Drive

Hard disk failure.

1. Make sure the correct drive type for the hard disk drive has been entered in the BIOS.

2. If the system is configured with two hard drives, make sure the bootable (first) hard drive is configured as Master and the second hard drive is configured as Slave. The master hard drive must have an active/bootable partition.

Excessively long formatting period.

If your hard drive takes an excessively long period of time to format, it is likely a cable connection problem. However, if your hard drive has a large capacity, it will take a longer time to format.

Serial Port

The serial device (modem, printer) doesn't output anything or is outputting garbled characters.

1. Make sure that the serial device's power is turned on and that the device is on-line.

2. Verify that the device is plugged into the correct serial port on the rear of the computer.

3. Verify that the attached serial device works by attaching it to a serial port that is working and configured correctly. If the serial device does not work, either the cable or the serial device has a problem. If the serial device works, the problem may be due to the onboard I/O or the address setting.

4. Make sure the COM settings and I/O address are configured correctly.

Keyboard

Nothing happens when a key on the keyboard was pressed.

1. Make sure the keyboard is properly connected.

2. Make sure there are no objects resting on the keyboard and that no keys are pressed during the booting process.

System Board

1. Make sure the add-in card is seated securely in the expansion slot. If the add-in card is loose, power off the system, re-install the card and power up the system.
2. Check the jumper settings to ensure that the jumpers are properly set.
3. Verify that all memory modules are seated securely into the memory sockets.
4. Make sure the memory modules are in the correct locations.
5. If the board fails to function, place the board on a flat surface and seat all socketed components. Gently press each component into the socket.
6. If you made changes to the BIOS settings, re-enter setup and load the BIOS defaults.

Appendix C - Debug LED Post and Troubleshooting

General Debug LED POST and Troubleshooting

POST (hex)	Debug Code Action	BIOS Program Definition	Possible Cause	Solution
Power on	None, blank	Nil	1. CMOS jumper is set at pins 2-3.	1. Set the CMOS jumper to pins 1-2 (default).
			2. 5Vsb of PSU is insufficient. (Minimum required - 2A)	2. Replace a suitable PSU.
00	Power on -> Stopped at **00**	BIOS program starts to set VID/FID to initialize CPU. (Boot Block area).	1. Mixed-up BIOS data.	1. Clear the CMOS data.
			2. Defective CPU connection.	2. Remove and reinstall the CPU.
			3. Incompatible PSU.	3. Replace a suitable PSU.
			4. No CPU power.	4. Inspect the 12V connection.
			5. Reset button short-circuited.	5. Inspect the cable that connects the reset button to the front panel connector.
00	Power on -> **00** -> Reset -> Looping	CPU VID is incorrect.	PSU does not comply with the system's requirement.	Replace a PSU that will provide adequate power to the system.
A0	00 -> C1 -> Stopped at **A0**	A0~AF Definition: Initializing memory check code.	1. Incompatible memory modules.	1. Remove and reinstall the memory modules.
			2. Mixed-up BIOS data.	2. Clear the CMOS data.
b8	00 -> C1 -> Stopped at **b8**	B0~BF Definition: Initializing memory/devices check code (registers).	1. Mixed-up BIOS data.	1. Clear the CMOS data.
			2. Incompatible memory modules.	2. Remove and reinstall the memory modules.
			3. Incompatible PCI devices.	3. Remove and reconnect the PCI devices.
C0	00 -> Stopped at **C0**	Initializing memory.	1. Probing for failed memory devices.	1. Make sure the memory modules are installed properly in the slots.
			2. SPD value is lost or empty.	2. Replace the memory modules.

POST (hex)	Debug Code Action	BIOS Program Definition	Possible Cause	Solution
C1	00 -> C0 -> Stopped at **C1** (00 -> C0 -> C1 -> Reset -> Looping)	Detecting memory. Detecting DRAM size and type. ECC auto-detection of L2 cache.	1. Incompatible memory modules.	1. Remove and reinstall the memory modules.
			2. Overclocking issue (tight DRAM timing).	2. Clear the CMOS then load the default speed.
			3. One of the memory modules is defective.	3. Try installing a single module only.
C3/C5	C0 -> C1 -> Stopped at **C3/C5** (C0 -> C1 -> C3 -> Reset -> Looping)	Expanding compressed BIOS code to the DRAM.	1. Tight DRAM timing (system is unstable).	1. Clear the CMOS then load the default speed.
			2. Insufficient DRAM voltage.	2. Increase the DRAM’s voltage.
			3. Overclocking issue.	3. Remove and reinstall the memory modules.
CF	Shutdown -> Stopped at **CF** (Shutdown -> CF -> Reset)	Resume on S1/S3 failed.	1. Insufficient DRAM voltage.	1. Increase the DRAM’s voltage.
			2. Incompatible memory modules.	2. Remove and reinstall the memory modules.
			3. Overclocking issue (tight DRAM timing).	3. Load the default DRAM speed.
			4. BIOS issue.	4. Upgrade to the latest BIOS.
E0	C0 -> C1 -> Stopped at **E0**	E0-EF Definition: Initializing PCIE device check code.	1. Mixed-up BIOS data.	1. Clear the CMOS data.
			2. Incompatible PCI devices.	2. Remove and reinstall the PCI device.

POST (hex)	Debug Code Action	BIOS Program Definition	Possible Cause	Solution
25	00 -> C1 -> C3 -> Stopped at **25**	Enumerating PCI bus number. Assigning memory & I/O resource -searching for a valid VGA device & VGA BIOS then placing it in C000:0.	1. Incompatible PCI devices.	1. Remove all PCI/PCIE devices and leave only the graphics card to test first. Test the devices one at a time to determine the one with problem.
			2. Incompatible USB devices.	2. Remove all USB devices including the USB keyboard and instead use a PS/2 keyboard to test.
			3. Defective graphics card. (VGA BIOS did not initialize)	3. Replace the graphics card.
			4. The graphics card was not installed properly.	4. Remove and reinstall the graphics card.
26	00 -> C1 -> C3 -> Stopped at **26**	Initializing display card. Initializing onboard clock generator. Disabling respective clock resource to empty PCI & DIMM slots. Initializing onboard PWM3. Initializing onboard H/W monitor devices.	1. Defective graphics card.	1. Replace the graphics card.
			2. Initialized wrong BIOS process. (Clock-gen circuit / Super IO circuit)	2. Clear the CMOS data.
41	C3 -> 25 -> 26 -> Stopped at **41**	Initializing the FDD device.	Detected floppy error.	Unplug the FDD cable and check for errors or check the BIOS settings.
			* Mixed-up BIOS data could be one of the causes too.	* Replace a new BIOS chip.
50	Power on -> Stopped at **50**	Initializing USB devices.	1. USB failed to boot. (BBS issue)	1. Clear the CMOS data first.
			2. Incompatible USB devices.	2. Try connecting the device to another USB port. 3. Test the USB devices one by one. 4. Set the USB power source to 5V by means of the 5V/5Vsb select jumper.

POST (hex)	Debug Code Action	BIOS Program Definition	Possible Cause	Solution
75	Power on -> Stopped at **75**	Initializing storage devices. (Probing for IDE devices or SATA devices)	1. Lost power source of some devices.	1. Inspect the power cable connection.
			2. Incompatible SATA or PATA device.	2. Inspect the IDE cable connection or replace another PATA/ SATA device.
			3. CD-ROM's spin took too long.	3. Remove the disc, if present, from the CD-ROM device.
7F	Power on -> Stopped at **7F** * Checksum error always appear after the BIOS default has been loaded.	BIOS setup module in progress. Reporting BIOS check errors. Waiting for keys: DEL key to load the BIOS default. F1 key to continue.	1. Checksum error occured. (Change/add devices such as CPU/ DRAM)	1. Load the optimized default setting of the BIOS.
			2. Error occured after clearing the CMOS.	2. Alter or adjust the BIOS setting.
			3. Onboard battery is depleted.	3. Replace a new battery.
			4. Overclocking issue.	4. Decrease the overclock range.
			* The battery circuit of the MB is defective.	* RMA action required.
FF	Power on -> Run to **FF**	Boot attempt (INT 19h)	Normal Operation	Nil
	* Blank Screen	System booted normally.	* The graphics card was not connected properly or it is defective.	* Remove and reinstall the graphics card.

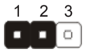
Abnormal Debug LED POST and Troubleshooting

POST (hex)	Debug Code Action	BIOS Program Definition	Possible Cause	Solution
79	Power on -> Prompt Stopped at **79**	There is no "79" definition on the Award BIOS code. (BIOS program executed the wrong process therefore showing the wrong POST code.)	1. Mixed-up BIOS data.	1. Clear the CMOS data.
			2. MB is defective. (NB chip may be defective.)	2. RMA action required.
88	Power on -> Prompt Stopped at **88**	There is no "88" definition on the Award BIOS code. (BIOS program executed the wrong process therefore showing the wrong POST code.)	1. Mixed-up BIOS data.	1. Clear the CMOS data.
			2. MB is defective. (NB chip may be defective.)	2. RMA action required.
FF	Power on -> Prompt Stopped at **FF**	Definition: BIOS process completed. (BIOS program executed the wrong process therefore showing the wrong POST code.)	1. Mixed-up BIOS data.	1. Clear the CMOS data.
			2. MB is defective. (NB chip may be defective.)	2. RMA action required.

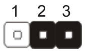
Index

Clearing CMOS Data

1. Turn-off and unplug the AC power.
2. Move the jumper cap from pins 1-2 to pins 2-3.
3. Wait for 5 seconds then move the jumper cap back to pins 1-2.



1-2 On: Normal (default)



2-3 On: Clear CMOS Data

Totally Discharging the Motherboard

Unplug the AC power and remove the battery for 5 minutes the the battery and plug the AC power back on.